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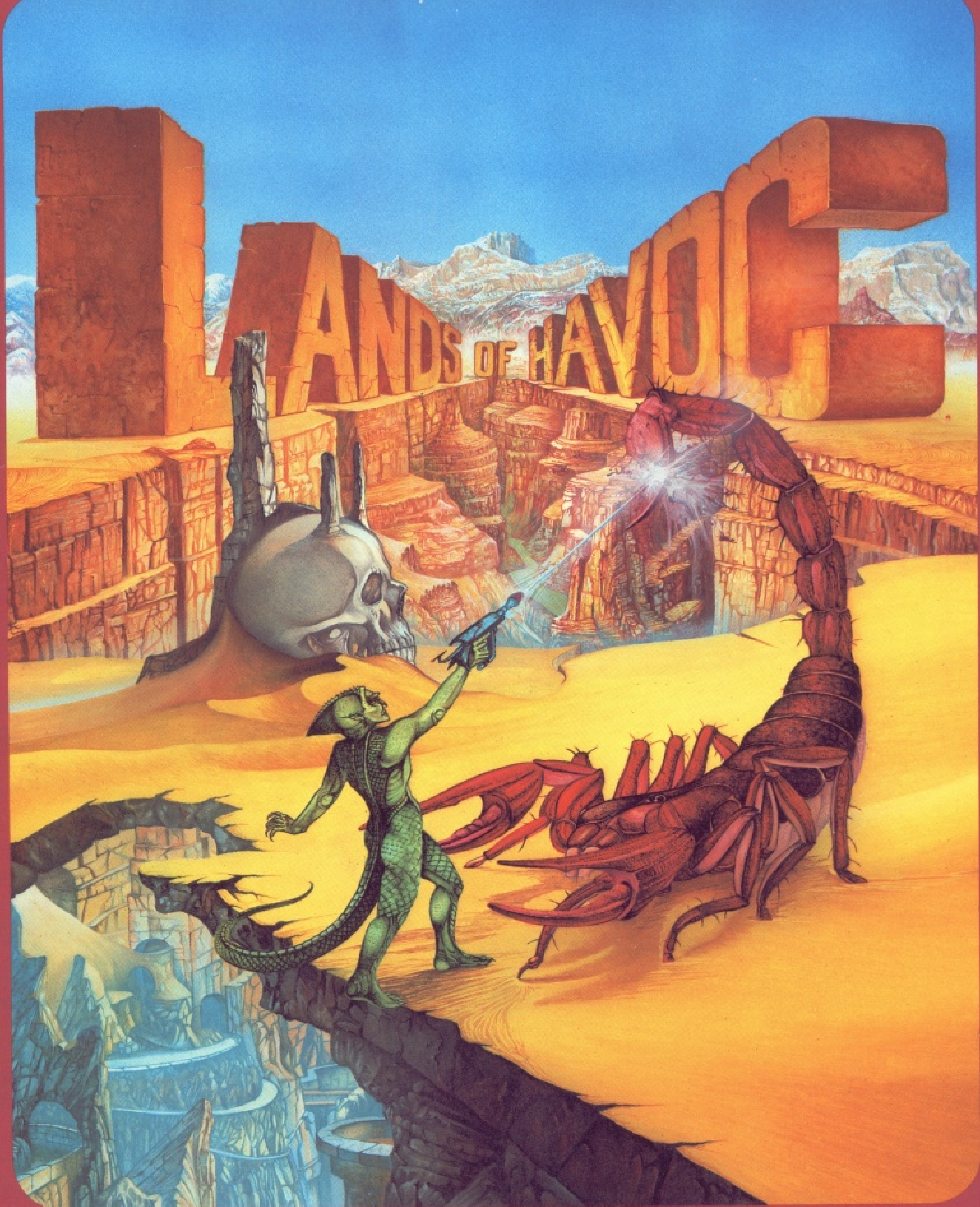
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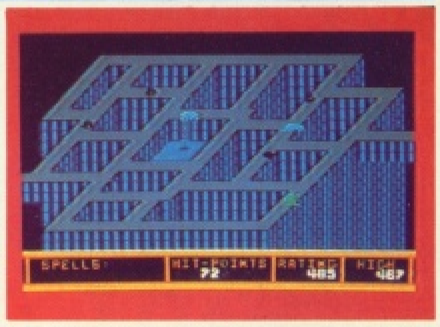
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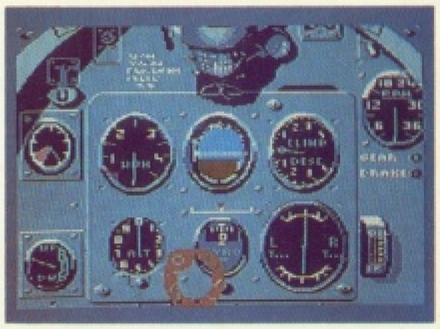
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Alison Hjul
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Croydon. The Vision Store, 96-98 North End. Tel: 01-681 7539.
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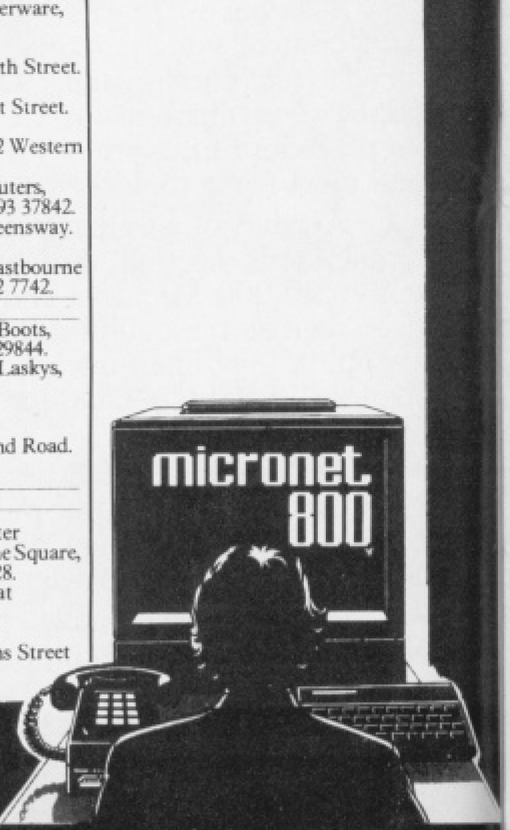
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OPEN ACCESS

Where did Frankie go? ...Sounds unbelievable on the 64 ... Crazies from the Commodore show ... Neverending story continued ... When is a 1541 not a 1541? ... CRL's Videodigitizer ... Another 64 mouse and a little Pazazz as Your 64 rounds up the month's news.

You Askin'? They're Dancin'

The days of multiplication tables, conjugated verbs and laborious Latin translations obviously disappeared with my old school tie. Learning and games playing are now synonomous. Or so companies like ASK would have us believe.

ASK, a company renowned for its educational software, is an early arrival on the C128 software scene. And *Pazazz* (which also runs on the 64) is ASK's newest weapon in its campaign for knowledge without tears. It's fun, creative and simple to use albeit probably more appropriate for the lower end of the intended six to adult age range. With *Pazazz*, you can design a scene, compose some music, create a performer and control its movement. With all this at your fingertips, you can then increase your brainpower by creating a disco queen, a breakdancer or a skeleton.

Ring (01)874 6046 and ask for further details.



'Scool to learn with a little Pazazz!

Show Motion

The Sixth Annual Commodore Show, at the Novotel in London, was a shadow of its former self. With big names such as US Gold and Activision conspicuously absent and few points gained for new and exciting products, maybe all 64 goodies are being held in store for the PCW Show in September.

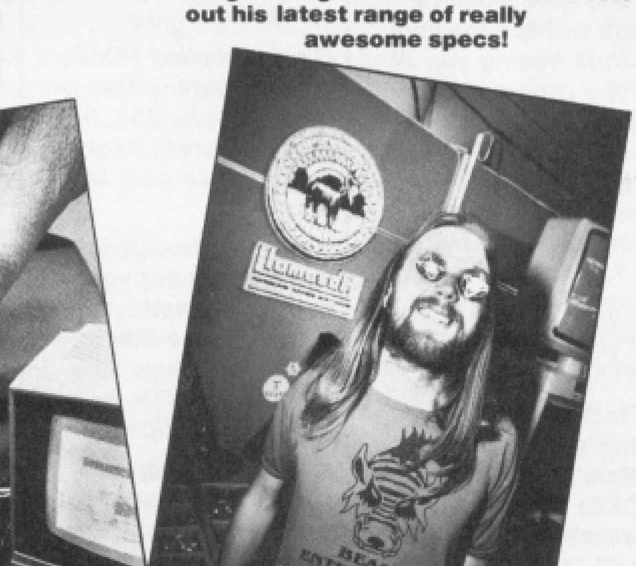
But this 64 showdown wasn't a total letdown. Commodore's 128 was exposed over here for the first time. There was also the usual smattering of glamour, provided by Domark's over hyped Bond game. And no show's complete without a famous face — this time a very indifferent Graham Gooch signing cricket bats at the launch of Augiogenic's cricket game. As always, Jeff Minter stole the show as hundreds of eager young groupies swamped the Llamasoft stand, more interested in autographs than Jeff's latest shoot 'em up, *Batalyx*.

Your 64's snapper certainly found something to smile about ...

At last, the truly portable computer! SMC's Mighty Mouse is a new device which allows you to shrink almost anything in sight!



Forget the games ... Jeff Minter tests out his latest range of really awesome specs!





Is it a life size Cuthbert doll? No, it's Microdeal's John Symes causing havoc at this year's Commodore Show.

Oh Gosh, Jolly Joysticks

St. Bride's school in Burtonport, Ireland is to launch a frightfully wacky computer game called *The Secret Of St Brides.* The school itself enables gels to relive their gym-slip days in a 1920's setting. Old gels may wear bonnets and blazers and enjoy romps in the dormy. (*Sounds spiffing. Ed*)

The game features Trixie Trinian, a real minx of a gel, who goes to board at St Brides looking forward to jolly japes and wonderful midnight feasts. She finds herself in an amazing adventure which takes her right across Ireland and through many a scrape.

The Secret Of St Brides will be released in July and will cost £6.95 from St Brides School, Burtonport, Co. Donegal, Ireland. Contact Miss Scarlett on Burtonport 30 to swot up on the details.



Is it a gel? Is it a boy? No it's a St. Bride's inmate

Getting Your Words Worth

Word's out! Precision Software has just released *Superscript*, a new megasized version of their popular word processing package. *Easy Script.* As well as all the *Easy Script* facilities, Superscript includes a menu command structure similar to Lotus 1-2-3 on big micros, an inbuilt 5-function calculator, personalized mailings using output from a database or spreadsheet and the ability to store complex command sequences and document formats on single keys for handy access.

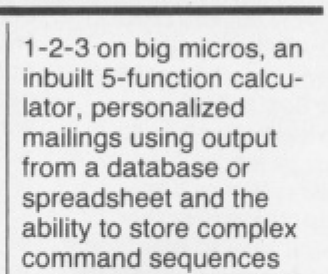
Superscript has a super price of £69.95. Have a word with Precision on (01) 330 7166.

Art Nouveau

Audiogenic clearly has the interests of any budding Michelangelos or Van Goughs at 'art. *(Groan. Ed)* It has drawn up a new graphics creator called *Art Master* which allows you to fill your screen with lots of clever hi-res pics. With a selection of brushes and colours, you can draw directly onto the screen or be doubly smart at art by keeping two separate pictures in memory at the same time.

You can apply such doodle power to filling outlines with a colour, swapping shapes between pictures, copying shapes and drawing straight lines and circles.

For more info, see our graphic packs round-up next month. But, if you can't wait 'till then, Audiogenic can be traced on 0734 664646.



ET or not ET? That is the question.

OFF THE HOOK



Pass on your tips or pass off your problems ... Our helpline king Martin McGuinness *looks back on the month's phone chat.*

Welcome Back! Let's get the big disaster out of the way first. The phantom REM remover has struck again. Both The Scribe *and* Educatabase *in issue 10 underwent accidental surgery before making it into print. My apologies to all who didn't figure it out. For The Scribe, stick REMs on lines 1000, 1300, 1500, 1600, 2000, 2200, 2300, 2500, 10000 and 2400. On Educatabase, add REMs at lines 2000, 3000, 4000, 5000, 6000, 7000 and 7500. Thanks to all those who wrote or rang in with that little lot.*

Diane Cambell also rang about Educatabase *(issue 10, June '85) as she wants to use questions over 40 characters in length. You can make this change quite simply by adding line 6065 IF N=0 THEN N=1 and changing line 6090 to NEXT N instead of NEXT N:PRINT. However, Diane, don't forget that the 64's INPUT statement won't allow strings longer than 80 characters so if you want to go over this you'll have to write some of the input routines for yourself.*

Philip Keables rang asking if there were any all-in-one word processor, database and spreadsheet packages available at a reasonable price. One such is Triangle *from Argus Press at a mere £19.95. Triangle is written in machine code and fully integrates its three functions — you can move information between the various parts at will. To find out more, give Argus a ring on (01) 439 0666.*

Derek Haken from Kingsbridge, Devon is working on a large adventure game in Basic and asked a lot of questions about ways of saving memory. His immediate problem is an "Out of memory error" when he runs the program. However, when he PRINTs FRE(0) he gets over 15K left. This is a common hassle with big Basic programs and a tricky bug to nail. The problem is that Basic needs space for calculations, to manipulate strings and to create 'stacks' for GOSUB-RETURN and FOR-NEXT statements. All this information is temporary and is free when the program is stopped but is needed once the program is running.

Some of the things to check in your program are that all FOR-NEXT loops and subroutines finish properly. If you jump out of FOR-NEXT loops or repeatedly GOSUB without RETURNing, sooner or later you'll run out of memory. If that's not the problem, make sure you re-use variables as much as possible and reduce the amount of string manipulation in the program. If all this fails, there's nothing left but to look for alternative ways of encoding your data and possibly using some of the 64's spare RAM such as the 4K at location 49152 onwards and the RAM underneath the Basic ROM.

Joel Crisp was the first to write in with a solution to the trumble trouble we had when we previewed Firebird's Elite. *His solution is to buy and launch an Escape capsule but it's one of several different ones we received. Strange really how so many people had answers before the program was available!*

Oh, and before I go, I've been flooded with calls asking for help with various adventures. I'm sorry but I can't help with these over the phone — I've not played every adventure and it does take up a lot of time. However, all is not lost. Take a look at our new Miss Adventure page this issue — that should sort you out! Catch you on the phones!

ACCESS

HACK Attack!

Welcome to the column where hacker ordinaire, Phil South, boldly POKEs where others have merely waggled their joysticks ...

G'day, my fellow hackers and hackettes. Once more into the headers ...

Well, the response to Chris Turner's plea for infinite lives on Manic Miner *has been positively hernia inducing, speaking as the poor twerp who volunteered to lift the sack up to the office! Most of you emerged with the same solution — you aren't copying each other's answers, are you?*

OK, here goes! Load past the first part of the program, either by listening to the tape (which sets my teeth on edge ...) or by the VERIFY command. This tells the computer to listen to the next block of code without loading it, thus freeing you of all the programmers' POKEs and allowing you to replace them with your own. Next, load the main program with LOAD "",1,1. And then:

```
POKE 16573,234
POKE 16572,234
POKE 16571,234
```

In fact, the weirdest thing about your letters is that all the POKEs were listed in reverse order: 73,72,71. Why is that? Are our happy hackers consulting back issues of other mags? Perish the thought!

Anyway, having done your POKEs, SYS 16390 and off ya go! A natty little by-product of this approach **is** *that you can jump* **levels**. **The** *program can now be broken by holding Run/Stop and tapping Restore. Next type SYS 16547, then press 'A', then 'S' (some say 'S', 'A', 'S' but both seem to work) and ... boomshanka ... the next level appears! By far the most radical approach to the Miner problem was that adopted by T. Hoppema of Holland. He suggests POKE 16571, 173 and SYS 16384. A trifle more compact and original than the others — and it seems to work. Well done T! Also thanks (and a hearty Tot Siens) to Jax of Holland who has yet another method:*

```
POKE 16419, (number of
screen 0-19)
POKE 16424, (lives
required)
```

On the second POKE, the highest number of lives must be 255. All these different hacks work just as well; take your pick.

A Crop of Crackers *Now, hold onto your hats, or indeed anything else that might fall loose, 'cos here comes this month's hot tips!*

Blagger *(Alligata): Here's a new twist to this old chestnut. On the title screen, press the SPACE bar to get more lives but (here's the new bit) if you then press CTRL + any letter you can jump to any screen. Also, for infinite lives, POKE 3560,8.*

Cavelon *(Jetsoft): The programmer's back-door is keyed by holding down the keys T,I,K,D,F,R,L all at once until the screen prompts "Hi Chris, what do you want?" Then select the level you want.*

Fort Apocalypse *(US Gold): Infinite lives available by POKE 14697,0: POKE 14760,0: POKE 36366,0. Alternatively, POKE 36339,153.*

And finally, infinite lives on:

Hard Hat Mac *(Ariolasoft): POKE 16877,173*

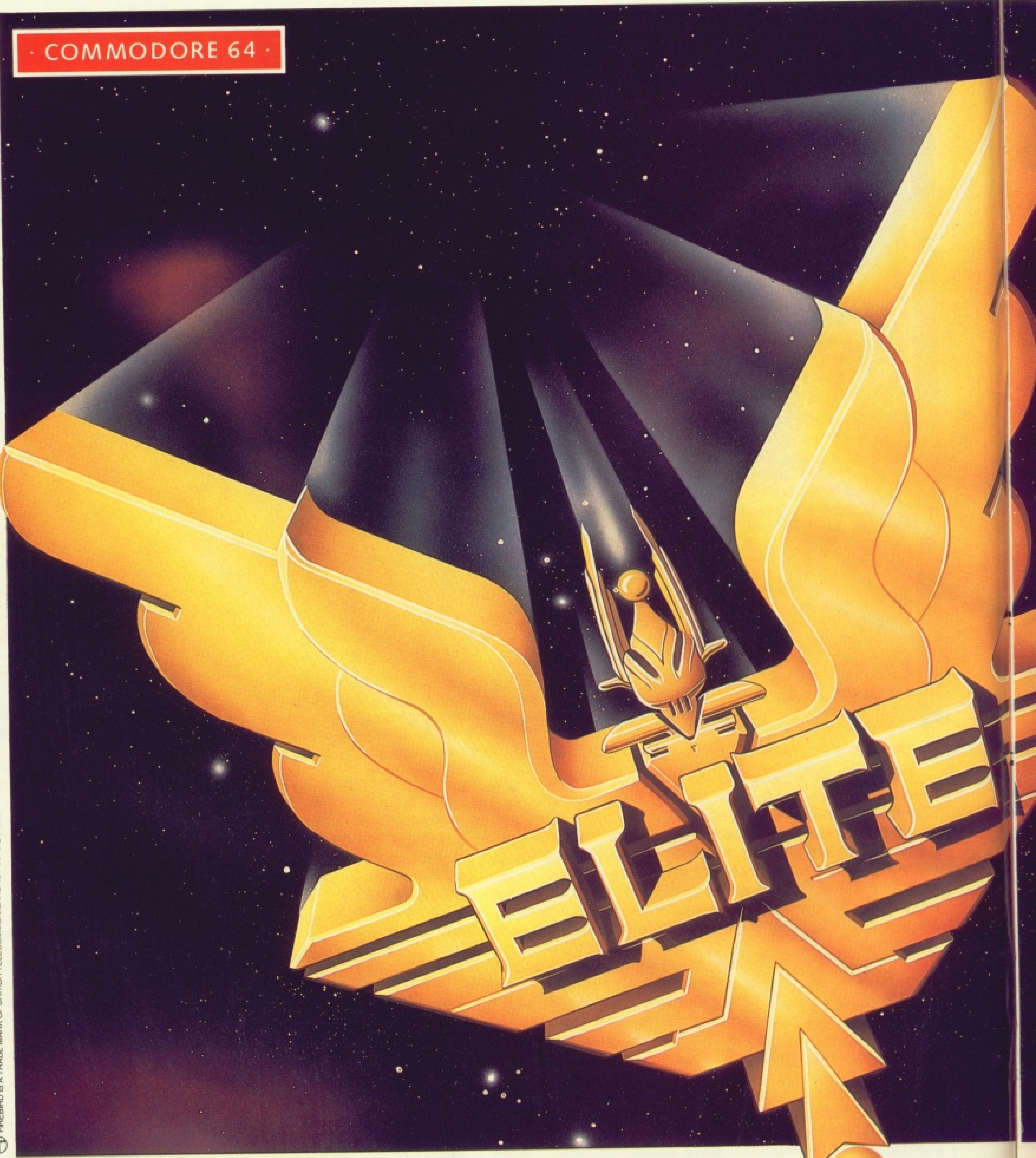
Hunchback *(Ocean): POKE 9521,44*

Tir Na Nog *(Gargoyle): POKE 34202, 200*

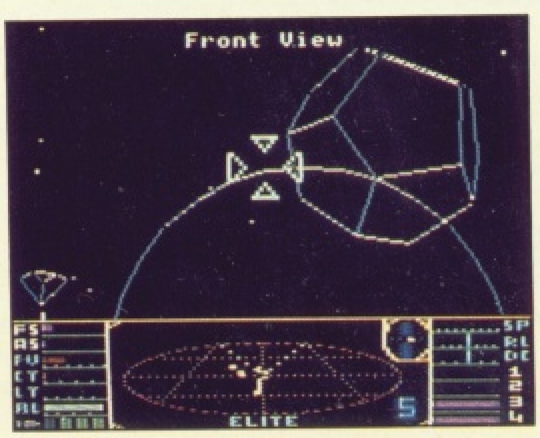
Booty *(Firebird): Cheat mode is keyed by holding down keys K,E,V,I,N.*

Spy Vs Spy *(Beyond): In a one player game, go to the airport entrance, boobytrap the doors, and wait. The computer player will walk into your trap with all the objects and be killed. Get all the objects and scarper...*

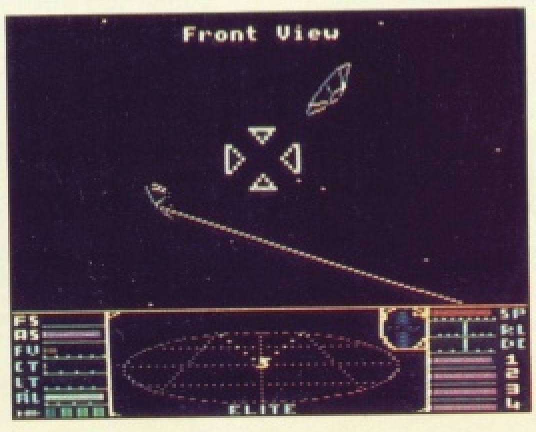
OK codebusters, that's your lot! But catch me next month as I promise a couple of eye-opening hacks on a couple of very new games. (Holy Square-Eyes, Batman!) Keep 'em POKEs comin' — but, please, please, no more Manic Miner *POKEs — he's had more infinite lives in one mailsack than the rest of us get in a lifetime of wishful thinking!* (You what? Ed). *Send those POKEs to Hack Attack Your 64, 14 Rathbone Place, London W1P 1DE.*



COMMODORE 64
ELITE



Front View
ELITE



Front View
ELITE



Elite – the ultimate, award-winning space challenge.

Once the privilege of BBC and Electron owners, Elite now takes a giant leap forward – onto the COMMODORE 64. (There'll be versions for the 48K Spectrum and Amstrad soon).

OUT IN DEEP SPACE, THESE REVIEWERS FACED THEIR TOUGHEST TEST.

Already tested by the intrepid explorers of the Commodore press, here – breathlessly – are just a few words from their advance battle reports.

"The Final Frontier?"

(Mega Game, Your 64, June 1985).

"**My favourite**... as absorbing and challenging as the original."

(Commodore Horizons, June 1985).

"To explain every element of Elite would take a book... **you'll run out of energy** long before Elite runs out of things to show you."

(Commodore Computing International, June 1985).

"A brilliant game of blasting and trading... truly a mega-game...**the game of a lifetime.**"

(Gold Medal Award, Zzap! 64, May 1985).

FIREBIRD

FIREBIRD SOFTWARE · WELLINGTON HOUSE
UPPER ST MARTIN'S LANE · LONDON WC2H 9DL

GOLD EDITION

Synth-A-Sid

It's love your lugholes time again! Not content with their previous attempts to boost the ear-muff industry, those Commodore boys are giving you bored-with-games 64 owners the chance to create yet more musical mayhem.

Sound Studio and *Sampler* are the offending instruments. If you're not content with using your 64 as a mere computer, *Sound Studio* will transform it into a music synthesiser and multi-track sequencer. This means you can either record music in real-time from the keyboard or input notes individually then add the timing. You can also build-up a tune on three separate sound tracks.

Or if you really want to hit the big time (*And have an understanding bank manager. Ed.*), *Sampler* will allow you to create the electronic stutter perfected by Max



Headroom or Paul Hardcastle's N-n-n-n-nineteen. With the aid of a microphone provided with the package, the 64 can play back digitally recorded sound.

The *Sampler* costs £69.95 while *Sound Studio* will set you back a mere £14.95. Oh and Commodore can't really take credit for these new wonders since they're the work of a company called Music Sales. Take note of their number — (01) 636 7777.

IN GEAR

Pick up some hip hardware for your 64! We highlight the greatest of the latest ...





▲ Vorsprung Print Technik!

At last, your very own private eye. Now, when your friends sneak in at the dead of night to steal your latest programming secrets you can trap them on film.

But this Video Digitizer from Austrian firm Print-Technik is much more than a fancy burglar alarm. It lets your 64 do some amazing tricks. Its many uses include the production of digitised pics which can then be coloured, enlarged, altered with a light pen or koala pad, or dumped to the printer. Or you can recoup its £150 price tag by plugging your 64 into a socket on a Parisian boulevard and taking flash piccies of unsuspecting tourists.

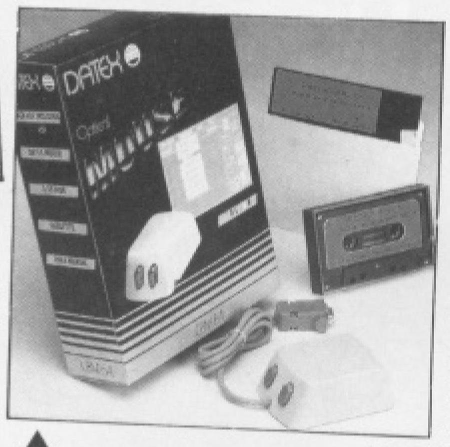
And it's easy to use. Just plug it into the 64's user port and the computer will activate it. Then video signals from several sources (such as a video camera, video surveillance camera, video recorder or video output from a television) can be displayed on the 64's screen, stored to disc, processed and printed.

Zoom in on CRL on 01-533 2918.

A Pocketful Of Joy

Trust the Japs to produce a joystick that looks nothing like the real McCoy. No more shoving, pulling and general waggling about — just a few diddy buttons to press. Hudson Soft's Joy Card is a flat box, a little longer than a credit card, which connects to the 64 in the normal joystick fashion. It certainly saves on the old wrist action with the joystick handle being replaced by four arrow buttons. The Joy Card does all a joystick should but seasoned joystick wagglers may take a while to get to grips with it.

Hudson Soft's Joy Card costs £8.95 and is being marketed by Orpheus, who can be contacted on 0706 51481.



▲ Ours Is A Nice Mouse Ours Is

It may be called a mouse — but it offers an elephantine leap *(Elephants can't jump — Zoo Ed.)* forward for 64 users. Datex MS-1's Graphic Mouse is the first fully optical mouse designed for use on the 64, 128 and SX64. It's a very handy device, helping beginners learn to use the computer for a wide range of applications such as architectural and engineering designs, as well as enabling you to draw pretty pictures and designs on the screen and print them out on all Epson compatible dot matrix printers.

The Datex Mouse costs £74.95 and features high resolution graphics, varying foreground and background colours and duplication of shapes to any part of the screen. It is easy to use with menu-type commands on the screen at all times.

EEC Distribution, who are marketing the product, will put you in the picture on 01-441 1722.



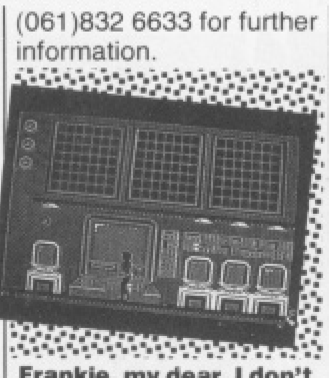
◀ Any Advance On The 1541?

At long last, all aspiring 64 disk owners have got a choice. A new disk drive has violated the 1541's previously uninvaded territory. Called Enhancer 2000, it claims to be compatible with the 64 — why won't it load our copy of *Elite* then? And is it faster? Well, built in routines like Format are quicker and general performance is a little faster than the 1541 although Commotion, who are marketing it, claim a new DOS from the States will double the speed. But speed doesn't come cheap — the Enhancer costs £229.

For further diskussion, phone Commotion on 01-804 1378.

Relax, Don't Buy It!

Having finally realised that they won't make a killing from the re-releases of the re-release of Relax, Island Records is dishing out Relax freebies with Ocean Software's new computer game, *Frankie Goes to Hollywood*. Give Ocean a buzz on (061)832 6633 for further information.



Frankie, my dear, I don't give a damn!

Not Mushroom for more?

This month's entry in the 64 Centronics interface category is Centipede, a software interface from Mushroom software. It sounds ridiculously good — it includes emulation of Commodore characters, translation of those fiddly graphics into readable English, whole screen and part screen lcw and high-resolution screen dumps, printer, buffer, error reports, definable strings and more!

Because it's a software interface, you only need a cable and not a £30 plus add-on. Mushroom has done its best to ensure that it doesn't conflict with other programs. You can load it at any address and its 'disposable' relocator will make sure it works. The price of this mushroom magic is just £9.50 or £19.50 if you want a ready-made cable as well. We'll be taking a look at Centipede as soon as possible but if you can't wait to know more, phone Mushroom on (01) 670 3533.

I Ain't Afraid Of No Prize

Judging by the response to our recent *Ghostbusters* competition, 'bustin makes you feel good. To jog your memories, you were asked to find ten Activision titles in a word search.

Mr Tony Richardson from Middle Wallop, Hants should certainly be feeling good as he is our first prize winner and receives a 1541 disk drive, all of Activision's games to date and a ticket to receive all future Activision releases.

Mr Richardson's tie-breaker was "I want to go ghostbustin' because ... It's not illegal, immoral or fattening — and the government haven't put a tax on it, yet ...!"

The five second prize winners who each receive ten of Activision's most recent games are Mark Taylor, Headington, Oxford; Peter Hanway, Lytham St Annes, Lancashire; Peter Dons-Moeller, Kirkstraede 22, Denmark; M Alfieri, Oakham, Leicestershire and A Hill, Canterbury, Kent. Finally here are the 100 runners-up who each got slimed:

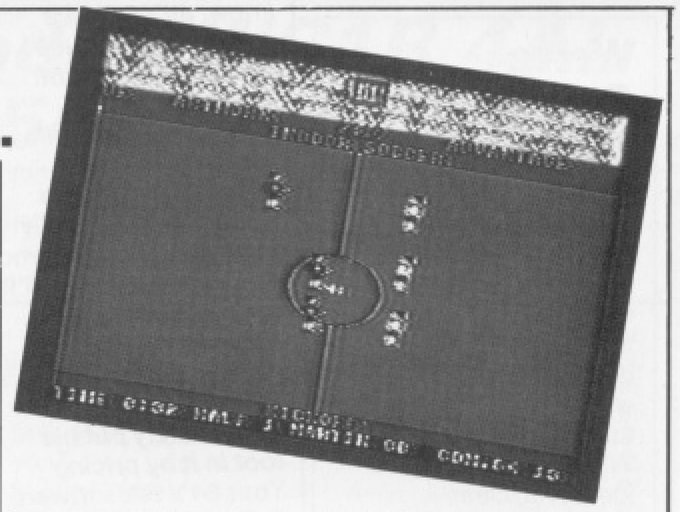
Avi Pinhas, Hendon, London; Mr C Turner, Old Windsor, Berks; Claire Benson, Cowes, Isle of Wight; J Moreby, Gosport, Hants; Jonathan and Anika Wolff, Boxmoor, Herts; Donald Mac Pherson, West Linton, Peebleshire; R Huntington, Lancaster, Lancashire; Michael Lowe, Southampton, Hampshire; Mehul Patel, Caulfield Rd, London; Damian Johnston, Huby, Nr Leeds; Chris Garbutt, Basildon, Essex; John Otley, Co Kildare, Eire; Peter Lander, Crawley, Sussex; Darren Guest, Alfreton, Derbyshire; A Turner-Howe, Overton, Hants; Eric Mason, South Shields, Tyne and Wear; M Menzies, Darlington, Co Durham; Laval Yan Shi Cheung, Mauritius, Indian Ocean; Master Nicholas Hird, Skipton, North Yorkshire; P Clist, Sedgefield, Cleveland; Ivor Canning, Lisburn, N Ireland; Ian Dons Moeller, Kirkstraede, Denmark; David Connor, Aintree, Liverpool; Andrew Bennett, Derby, Derbyshire; Darran Fawcett, Eastleigh, Hants; Anurag, Sharma, Gateacre Rise, Gateacre; John Lomax, Mossy Bank Rd, Wallasey; Michael Page, Wolverhampton, West Midlands; R Taplin, Filton Park, Bristol; P Leitch, Reading, Berks; Paul Render, York, North Yorkshire; John Lockley, Dalton-in-Furness, Cumbria; T Stallard, Tamworth, Staffs; Gary Weston, Gillingham, Kent; Dave Mantei, Dhahran Airport, Saudi Arabia; Hazel Dene, Heath Rd, Bedfordshire; S James, Hightown Liversedge, West Yorkshire; Marc Boyd, Inkberrow, Worcs; S Arnold, Maidstone Kent; Martin Andrews, Ryehill, Northampton; Steven Hadley, Chippenham, Wilts; Keith Mc Leman, Aberdeenshire, Scotland; E Besseling, The Hague, Holland; Patricio Osses, Valenusrendeel, Holland; D R Mahatantila, Kingston-on-Thames, Surrey; James Campbell, Mount Florida, Glasgow; L P Bruce, Braunton, North Devon; Mark Amos, Canterbury, Kent; Paul Jarvis, Great Yarmouth, Norfolk; Natanel Eizenburg, Ramat Gan, Israel; John Stoddart, Penicuik, Midlothian; David Clark, Cumberland, Glasgow; H Houlden, West Walton, Cambridgeshire; G Ball, Fife, Scotland; Augustus Hamilton, Thornton Heath, Surrey; Mr A Bryson, East Kilbride, Glasgow; Chris Way, Wokingham, Berkshire; Neil Carter, Boston, Lincolnshire, J R Morgan, Neasden, London; Mark Sutton, Tamworth, Staffs; A Gaskell, Rainford Near St-Helens, Merseyside; Mr I Brotherson, Cheltenham, Gloucester; D Nottingham, Seaton Lane, Hartlepool; Mrs T Dutton, Westerham, Kent; Steve Wood, Warley, West Midlands; Andrew Neocleous, Palmers Green, London; Andrew Simpson, Tamworth, Staffordshire; Janet Braithwaite, Islington, London; Martin Wilson, Baslow Road, Sheffield; P Taberham, Warrington, Cheshire; Anthony Swinbourne, Penarth, South Glasgow; S Choudhry, Ealing, London; S Boocock, Yeadon, Leeds; Gobin Michel, Antwerpen, Belgium; Rory Sheridan, Hendon, London; Alan Halliday, East Lothian, Scotland; N Harkett, Scarborough, North Yorks; Simon Fletcher, Beccles, Suffolk; Craig Jones, Dina Powis, South Glamorgan; Marcus Parry, Piddletrenthide, Dorset; John MacKay, Bonaly Brae, Edinburgh; Raymond Harris, Reigate, Surrey; Mark Fox, Enfield, Middlesex; Graham Kennell, Glen Parva, Leicester; M K Heywood, Telford, Salop; Mr M Hind, Alford, Lincs; Ian Millis, Bury Greater Manchester; D I Vine, Finsbury Park, London, Mr G Pansearr, East Ham, London; C Cornelius, Southampton, Hampshire; Chris Palmer, Great Yarmouth, Norfolk; Stephen Lee, Skipton, North Yorkshire; Mr F Salim, Rotherham, South Yorkshire; Johnathan Clarke, Norwich, Norfolk; S Low, Kings Lynn, Norfolk; H O Philip, Zwaag, Holland; Steven Bailey, Corsham, Wiltshire; Gary Lewis, Luton, Bedfordshire; Scott Nichol, Corby, Northants; Mr D Adams, Rugeley, Stans.

Congratulations to all our winners, it was a very close competition. But all of you who didn't win, don't give up, try your hand at our competition this month.

More Mirrorsoft

Due to popular demand, and since a certain newspaper owner has yet to get his entry in, we're giving you a whole month extra (till July 31st) to submit your entry in our Mirrorsoft compo (May issue). For those of you with poor memories, we asked you to create a totally amazing game using Mirrorsoft's *Games Creator*. The best entry gets 1000 smackeroonies and all winners will have their creations considered for publication. So get tapping!

Here We Go, Here We Go, Here We Go...



Yes, soccer fans, these are the dulcet strains you'll hear emitting from your 64 on loading up Anirog's latest game — *Five-a-Side Soccer.* As well as bursting into song this game also claims to be the first soccer game to introduce a penalty shoot out. You can either play the computer or another player.

Five-a-Side Soccer, another addition to the long succession of recently released sports simulations, retails for £5.95.

Phone Anirog on 0322 92513 for further details.

Hard lines

A few words could be worth a thousand pictures— Chris Palmer looks at some graphic books...

Sick of people telling you what a great graphics machine you have? "If it's so good", asks you, "Why didn't Commodore include any graphics commands?". Pick any reason you like from plain stupidity to a marketing ploy to sell extension cartridges. Either way, it's given the book fraternity enough to be getting on with for years.

I'll start with ***How to Write Picture Programs for the Commodore 64*** *— a 91-page masterpiece at a staggering £13.95. This is a difficult book to review — it does what it says it does and is therefore a good book. But who'd pay £13.95 for something that teaches you to draw pictures of the likes of Maggie Thatcher and Mr T on your 64? The first part deals with converting a drawing on paper into character definitions and then into data statements of the program. All jolly gripping stuff. The book concludes with 25 programs to produce pictures of various well-known faces. The book would have done better to expand on techniques to cover things such as creating character mode backgrounds for games programs and so on. As it stands, it's an expensive luxury for those who delight in typing in DATA statements.*

How to Write Picture Programs for the Commodore 64
Robert Traister
Published by Prentice-Hall £13.75

Commodore 64: Exploring graphics*, book two in the Watson's workbook series, comes in at a more reasonable price. It starts with a bizarre paragraph explaining that the 64 is far better for graphics than the Dragon or Spectrum because they have lots of graphics commands and the 64 has only two — PEEK and POKE. From this strange beginning, it settles down to the usual workout through defining characters, sprites and so on. The flow's upset by one or two strange digressions and some wonderfully confusing diagrams of how sprite collisions work. They show a ball approaching, touching and squashing into a wall, all of which apparently results in no collisions! Strange indeed. In all, the book teaches you a few basic techniques but not a lot else...*

Watson's Workbook 2
Exploring Graphics
S Gray, M Holmes
Published by Glentop £4.95

Finally, Nick Hampshire lives! Yes, one of the great gurus of Commodore computing is back with ***Advanced 64 Graphics and Sound.*** *But be warned — if you thought assembly language is for talking to car workers then you might find this a bit hard going. The majority of the book is taken up with listings and explanations of a complete set of graphics commands that you can add to Basic. The standards such as Plot, Fill and Draw are there as well as a bunch of more esoteric commands. There is also a small but useful section on game graphics which includes smooth scrolling and raster interrupts. The book concludes with a small music section covering background music and interfacing a keyboard. A good little book even if it's a little short on the explanations in places.*

Advanced 64 Graphics & Sound
Nick Hampshire
Published by Collins £10.95

Write On For Your 64

C'mon — don't be shy! We're always on the lookout for articles and programs from writers new and old. It doesn't matter whether you've done it before or not — we can always sort things out in the office. What counts is original ideas, wit, clear programming and ace gametalk. We know you've got your own opinions — get them on paper.

If we use your stuff, you'll be well rewarded — around £65 per thousand words and about £40 per page of program but haggle for higher rates if you've got something special.

And there's a dead cert way to impress us — type your articles double-spaced with wide margins for us to doodle in. We're quite happy with computer printout — even off an 801. If you're including a program, send us a listing, cassette or disk and some program annos — you can see how we do it in the mag. Finally, don't forget to include your name and address and preferably a phone number so we can chat about the article. If we decide not to print your article, an SAE will speed its return to you. Send your work, as always to *Your 64*, 14 Rathbone Place, London W1P 1DE. All contributions gratefully received!

Readers' Revenge
Don't think our games reviews are much cop? We'll be starting a readers' revenge spot soon where you can voice your own opinions on the latest games. In the meantime show us what you can do — pick any game you want (good or bad) and send us a review (up to 200 words). If we like it, we'll pop your name on the list! Send your review to Readers' Revenge, *Your 64*, 14 Rathbone Place, London W1P 1DE.

***Surya* communicates the goings-on on Compunet and follows the 64's progress on Micronet ...**

NET Words

Oh dear! As Cnetter's know, all Your 64's pages on Compunet vanished overnight! Any page on Compunet has a 'life' assigned to it and when it expires, the system automatically zaps it! And guess who wasn't too careful? (I'll get you for this! Ed.). Anyway, dear old Ed stepped in to put things right and immediately put his foot in it by pricing Your 64's telesoftware listings at a mere £50 each instead of 50p. But it all works out fine in the end — Your 64 is back on the net at page 280. Watch out for some great new stuff coming up ...

Meanwhile, there's great news for those of you who've been having problems with line noise — Commodore has produced a new version of the Commodore Communications modem. This is said to be more reliable and is now being sold in place of the old one. If you've been plagued by the dreaded noise warnings (the letter N, C or S in the bottom right of your screen) then the official advice from Compunet is to get Commodore to exchange your modem. Commodore will do this free of charge — just phone the service desk on (0536) 205252.

Compunet has obviously been keeping an eye on what Micronet is up to: it's just announced a Chatline facility! This enables users to join in a real-time conversation with other users. Chatline (which will probably have been renamed Chatterbox by the time you read this) is run by the Independent Compunet Club (ICC) and begins on page 1801. Unlike Micronet's Chatline, Chatterbox is open from 6pm to 8am the following morning, so all-night hackers need never be alone!

Talking of the ICC, membership is now free so there's no reason not to join. Compunet reckons just about all users will join the club. ICC now has its own jungle, notice-board and directory of members and begins on page 116534.

Despite rumours that the author of CompuCat is the same ex-Micronet contributor who recently ran into a little, errr, squeak with the law, the section is still going strong. Close encounters of the communications kind begin on page 270. You should also take a look at the general comms section if you haven't already done so. The software and info is on page 2020 while the comms jungle begins at 2000. Rumour has it that one or two hackers have been advised to 'cool it' after uploading some dodgy info! Official policy is to allow "here's a number I've found, I don't know what it is" messages but to delete anything offering IDs or passwords.

There's lots of good news on the software front. Firstly, the user software has now been organised into sections. These are:

Reviews	*p1230*
Utilities	*p1240*
Games	*p1250*
Business	*p1260*
Education	*p1270*
Music and graphics	*p1280*
Miscellaneous	*p1290*

Changes have been happening to the commercial software, too. You'll find a computing software index on page 240, education on page 110143 and games on page 110142. Compunet now has over 300 programs on offer and attracted loads of interest from other suppliers at the Commodore Show. Business users will appreciate the recent Briefcase section beginning on page 800: there's a business jungle on page 8000, software at 109230 and an index to the business software at 110444. The business jungle, particularly, looks like a handy way of getting in touch with others in your line.

Mad man Minter has now got his Llamasoft Newsletter up on the system — GOTO 107901 for Yak's Hairy Bit! (Is there no escape? Ed) Not to be outdone, Virgin has set up the Virgin Gang of 5 at 117089. Both are well worth at least a look. Even weirder additions to the system include Boggs' Music Requests. Simply tell Boggs your favourite tune, and he'll synthesise it for you! To play the tune, you just download and RUN it. GOTO 120359.

The Commodore Information Service is now up to 700 pages. If you want to get some advice, make a complaint, check out CBM news or contact the company, GOTO 210. ICPUG, too, is expanding and now has around 200 pages. Many of its pages, however, are open only to ICPUG members. Membership costs £10 per year and you'll find full details on page 108692.

And on Micronet ...
Now that the 64ers can sample the delights of Micronet, it's time to widen your eyes to what's going on on the other big database. We'll be covering Micronet fully starting next month but for now, we'll catch up with the news.

The bad news is that quarterly subs are up from £8 to £10 — but, as the Herbal Hill mob points out, it's the first time prices have gone up and many new features have been added to the system. Those of you thinking of buying a modem should take a look at offers from Pace, Tandata and Minor Miracles. Buy one of theirs and you get your first three months on Micronet free.

64 comms software for Micronet has been greatly improved with a new package from Y2 of Watford. The new program has a much improved protocol to make uploads more reliable and downloads quicker. If you've got the old software don't panic — Micronet will update you free of charge.

There's also a new package for the Commodore Modem. Until now you've had to join Compunet to get its free Micronet software — now you can join Micronet direct and simply ask for the software. Not that the two services are rivals — Micronet's technical manager merely pointed out that "Buyers of the Commodore modem will want to have something useful to do with it". I bet he didn't say that on Compunet's Chatterbox!

And if you think it's Compunet which poaches Micronet's ideas, take a look at the net's new Gallery service — you got it, it's the Jungle from Compunet. And it's just as popular — Micronet claims 2000 users within its first two days and there's now a jolly 16000 people using it. Among the hackers, jokers and artists, you can even find the SDP (Who they? Ed).

Talk to Your 64: Compunet, courier mail to YOUR64. Micronet, mailbox 016311433.

THE 64 SOFTWARE CENTRE
1 Princeton Street, London WC1R 4AL
01-430 0954

SOFTWARE PRICE LIST — Prices include VAT

d = disk c = cassette r = cartridge

Accounting systems (Office use)

Anagram Systems — Sales Ledger	d	£75.00
Anagram Systems — Purchase/Nominal Ledger	d	£75.00
Anagram Systems — Cashbook	d	£75.00
Gemini — Cashbook (with nominal analysis)	d	£64.95
Gemini — Cashbook (with nominal analysis)	c	£59.95
Gemini — Final Accounts	d	£64.95
Gemini — Final Accounts	c	£59.95
Gemini — Cashbook/VAT/Final Accounts	c	£89.95
Gemini — Cashbook/VAT/Final Accounts	d	£99.95
Ramtop — Accounts Package	d	£75.00
Microsimplex — Cashbook	d	£172.50
Studio — Payroll 64	d	£34.95
Dell — Invoice Generator II	d	£24.95

Stock Control systems

Practicorp — Inventory 64	d	£29.95
Gemini — Stock Control	d	£24.95
Gemini — Stock Control	c	£19.95
Anagram — Stock Control	d	£75.00

Home applications

Gemini — Home Accounts	c	£19.95
Gemini — Home Accounts	d	£24.95
Gemini — Combined Home Pack	d	£39.95
Gemini — Combined Home Pack	c	£34.95
Fieldmaster — Home accounts	d or c	£19.95
Adamsoft — Checkbook Manager	d	£14.95

Database Filing Systems

Handic — Diary 64	r	£19.95
Fieldmaster — Mail label	d	£29.95
BI — The Consultant	d	£125.00
Practicorp — Practifile 64	d	£44.50
Precision — Superbase 64	d	£87.00
Precision — Superbase Starter	d	£39.95
Simply file	d	£69.00
Gemini — Database	d	£24.95
Gemini — Database	c	£19.95
Gemini — Mailist	d	£24.95
Gemini — Mailist	c	£19.95
Fieldmaster — Record Card	d or c	£19.95
Dell — Superfile	d	£14.95

Spreadsheets

Handic — Easy Calcresult	r	£49.95
Handic — Advanced Calcresult	r + d	£90.00
Practicorp — Practicalc 64	d	£44.50
Practicorp — Practicalc 64	c	£39.95
Practicorp — Practicalc II	d	£69.95
Supersoft — Busicalc 1	d or c	£17.95
Supersoft — Busicalc 3	d	£49.95
Fieldmaster — Worksheet	d,f or c	£19.95

Statistics

Handic — Stat 64	r	£29.95

Word Processors

B.I. — Paperclip 64	d	£90.00
Simple — Simply Write	d	£46.00
Simple — Simply Write	c	£40.25
Hesware — Heswriter	r	£42.95
Fieldmaster — Pagewriter	d or c	£29.95
Bank Street Writer	d	£69.00
Precision — Superscript	d	£69.95

Utilities

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OH NO, NOT A NO, NO!

No, no, no, no, *no*! You've got it all wrong. Here I am, an ultra-satisfied reader of *Your 64* for almost a year, I miss one (yes — one) issue and when I get the next I'm almost struck-dumb with shock, horror and grief!!!. I refer (of course) to the disgraceful omission of "Talkin' 64" in the May issue. It astonishes me how the "U.K's brightest magazine for the 64" can actually fail to see the importance of the single best regular feature in the whole computer magazine world! I'm sure other readers agree.
Edmund Grenby, St. Albans, Herts.

You liked it huh? Is Mr. Grenby a voice crying in the wilderness? Let us know! Ed.

FIREBIRD BRAINS

We are writing in reply to your request for a solution that would get rid of the Trumbles in Firebird's *Elite*.

We think this is the solution: Equip your ship with fuel scoops then, when you have Trumble trouble, fly at the sun as though you were going to collect fuel. The Trumbles should be roasted by the sun.
Fred Stivochombe, Mark Taylor, Chris Mann, Bristol

More members of the not so elite band of people who had copies before it was launched? Maybe this accounts for the variety of Trumble solutions we've received! Ed.

AIR MAIL

I'm from Australia (the country that keeps beating your cricket team into a pulp) *(Watch it Bruce — we'll get our revenge this time round. Ed.)* and I was wondering if it is possible for us down under to connect to Micronet and Prestel (yes, yes I know I'll need a modem)? Also, are there any Aussie outlets of these companies?
D. Seinor, Perth, Australia

Yes, you can connect to Micronet but I'm afraid us pommies get a better deal. A quarterly subscription in the UK is £16.50 (£10 for Micronet and £6.50 for Prestel) whereas it'll cost overseas users £60 (that's £50 for Prestel).

Linking up to Micronet in the UK will mean hefty phone bills but you'll get much better value from Micronet's free electronic mail service. And you can reduce costs by subscribing to PSS (Packet Switched Stream). Consult your local telephone company for details.

Next year there should be a Micronet outlet in Australia but, at the moment, overseas Micronet services are only available in Ireland, Hong Kong and Sweden.

If any other overseas readers are fretting about 64 services in the UK, why not drop us a line? Ed.

YE OLDE PROTECTION PROBLEM

I'm not an unreasonable man. I own a 64 and have just bought a 1541 disk drive. I'd like to transfer my library of cassettes onto disk so that I can load my games quickly. However, not one of my games has instructions for doing so and I'm no programmer. It seems that most tapes are protected in some way so that only real techies can break into them and copy them to disk. This is plain unfair! I'm not a pirate but I do want my 1541 to be more than a white elephant. Isn't it about time software companies took account of this? In the meantime can you help? Is there an easy way to move my tapes onto disk?
John McCarthy, Blackburn, Lancs.

It's a tough nut to crack. Software houses do use protection schemes to foil the pirates but a lot of tapes use fast-loaders just to speed loading up. That fast loading programs can't be moved to disk is just a side-effect! You can buy copy programs that will move most tapes to disk and, in particular, nice things have been said about Dosoft's Mega-transfer disk. Call Dosoft for details on 0253 593288. Ed.

GHOSTS BUST

After reading your review of *Ghostbusters* (Issue 6), I eagerly awaited its appearance in my computer club's catalogue. As soon as it appeared, I ordered it — contemplating the wonderful sound effects, speech synthesis and those wonderful hi-res screens shown in *Y64*.

I got my copy in May and after only two hours playing, I had amassed thousands of pounds, beaten the marshmallow man scores of times and entered the temple of Zuul! This game is not just simple — it's boring! The only masterful part of this software is its sales hype. I'll give it my nomination as "Hype of the year".

If there is anyone still interested in buying or even playing the game, here are a few tips to help the misguided.

It doesn't matter how fast you get around, the quicker you are the longer you have to wait for more slimers. So buy the VW Beetle. Neither should you buy more than four traps.

Remember that the more money you spend, the more slimers you have to catch. So don't buy the hoover or the image intensifier — they hardly make any difference. Ghost bait is a different matter but you can do without the marshmallow sensor. You can tell the man is coming when the ghosts suddenly change direction. But you can relax for a while because the MM won't appear until the city's PK level is above 5000.

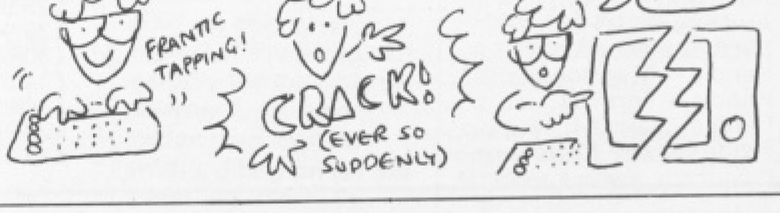
I could go on but I think you've got the idea by now. Entering Zuul is pretty easy too. Take your man back towards the car and position him so his feet are just below the grey line level with it. Walk back to the doorway, moving the man so that his head is dead centre with the crack in the door. Push the joystick forward when MM is at his highest point and that's it! The anti-climax of the year.
G J Martin, Stoke-on-Trent.

Moanin' makes you feel good . . . Sorry you didn't like it — maybe you'd like this Ghostbusters T-shirt, hat, record and poster as compensation. As for 'hype of the year', we've got our own ideas. Tell us yours and maybe we'll confess . . . Ed.

CARTOON TIME?

How about a cartoon in your magazine? Here's my contribution.
Paul Welch, Exeter, Devon.

'Errr... well yes. We are working on the adventures of Sid and his sister Viccy but I think we've got a way to go. Any good ideas? Ed.



THE WOOT OF THE PROBLEM?

Er, me and me 64 may be a bit fick but 'ow does that powerful rootine wots s'posed to give yer woots and powers wurk — my 'puter only gives me 0s as an anser see — even for the 2th and 3th root.
M.Y. Brane-Urts, Manchester.

Now, 'ere we r trying to lern our reders 'ow to rite proper — and they don't take the damndist bit of notis! Ok, we'll come clean — we made a bit of a Mr. Meaner with 'Power Play' (Missives, Issue 10). But instead of fixing Mr. Lovelock's prog, we'll admit there's a better way. To find the Rth root of a number N, you just use N↑(1/R). Ed.

PULL THE OTHER ONE

I have the older kind of C2N cassette recorder for my 64. Unlike the newer kind it doesn't have a plastic case which makes it easy to remove and connect to the computer. I spend ages trying to remove it. Have you any suggestions?
Eliot Maggs, Canvey Island, Essex.

We use one of those ... all you do is sort of pull and waggle at the same time. Besides, why do you keep taking it off? Ed.

BEATING THE C2N

I bought my 64 and C2N for programming and it was over a year until I bought any commercial tapes. When I did, I found they didn't load — the reason being that the read/write heads on the C2N were out of alignment. I realigned the heads to load commercial tapes and guess what? Twelve months of programming on tapes that I couldn't load.

There is only one solution. First, ignoring Commodore's advice, align your C2N so that it loads your own tapes. Borrow another C2N *(Preferably not a friend's? Ed.)* that will load commercial tapes and then do

MISSIVES

something else that Commodore tells you not to. Load your programs from your own C2N and then, with the 64 still on, swap over to the other C2N. This is alright provided that no keys are left depressed during the change-over. You can then SAVE your programs onto the second C2N. Finally realign your own C2N so that it loads commercial tapes and the new tapes you've just saved on the second unit.

John Mullowney, Winsford, Cheshire.

Err... it sounds great if you're in a fix. But you do it at your own risk. Anyone else been taking the direct approach to hardware hassles? Ed.

PAIN IN THE NECK

Before buying my 64 two weeks ago, I bought a Spectrum but decided I needed a machine with arcade quality graphics and better sound. After browsing through the computer mags at the newsagents, I saw *Your 64* with its good crisp colour photos of actual screenshots which persuaded me to buy a 64.

Although I'm delighted with my 64, it's been an agonising decision — after only three attempts at *Daley Thomson's Decathlon* all that vigorous joystick action caused me to pull the muscles in my neck!

Mark Silvester, Cleethorpes, South Humberside.

At least you eventually came to your senses, Mark. Perhaps the 'Great-Sir-Clive-in-the-Sky' was wreaking his vengeance! Ed.

EAR'S AN IDEA!

In issue 6, Dave Robinson asks about a method of locating data audibly on his 64/C2N outfit. I spent a little time trying various miniature amplifiers and loudspeakers with various degrees of success. But I wanted a simple solution, i.e. one which didn't need a power supply and was self-contained inside the 64 or C2N..

My recorder is actually a SuperSaver 20/64, a Taiwanese copy with an almost identical interface board. All that is required is a 38mm diameter miniature loudspeaker of 8 ohms impedance connected in *series* with the 1K ohm resistor which is in turn connected to pin seven of the outermost LM358 IC on this PCB.

The wiring must be located in such a fashion that it does not interfere with the transport mechanism. If the loudspeaker is of the above diameter and is sufficiently low profile, it can be incorporated inside the case of the SuperSaver with some careful cutting down of a redundant support pillar (although I'm not sure if this can be done on a C2N).

In use, the unit does not cause any data corruption either into or out of the computer and provides an adequate if quiet degree of volume without recourse to a volume control.

Alan Morgan, Thingwall, Wirral.

Now that does sound something worth vandalising your cassette recorder for. Ed.

LOGIC LOGISTICS

In response to a pull out advert in *Your 64*, I placed an order with Logic 3 for *Solo Flight* and *Hover Bovver*. I paid extra for membership and first class postage but I'm still waiting for tapes. I wrote a letter over a week ago stating my order and the day it was sent. Yet again, no reply. In the blurb, Logic said if it couldn't complete an order it would notify you and give you three days to write back.

Three days? It's taken them three weeks to do nothing. The small print also points out "as we grow we will be able to improve our service to members still further." The director must be a midget. Please help me.

Derek Baird, Alloway, Ayr, Scotland.

The bad news is that Logic 3 went to the great big software chart in the sky around the middle of February. The good news is that the 64 club has been taken over by Mr. Software. If you or any other readers still haven't got your stuff, there's a chance that your order is still at the receiver. So all you've got to do is talk to Mr. Software and find out if he's got your order. If not you can cancel your original cheque and place a new order. Ring Mr. Software on 0494 450586 or write to Kelvin House, Totteridge Ave, High Wycombe, Bucks. Ed.

ARCADE ACE

Oh no! He's escaped ... Arcade Ace has broken loose from his half page cage and is on the rampage. Can anything stop him now?

Hullo World, Ace here! My, haven't I grown? Heaps more hot tips (ouch!), cheats and tricks of the trade from the column that knows all ... What d'ya mean "everyone hates a know-all?" Step outside and say that ... (*Get your act together! Ed.*)

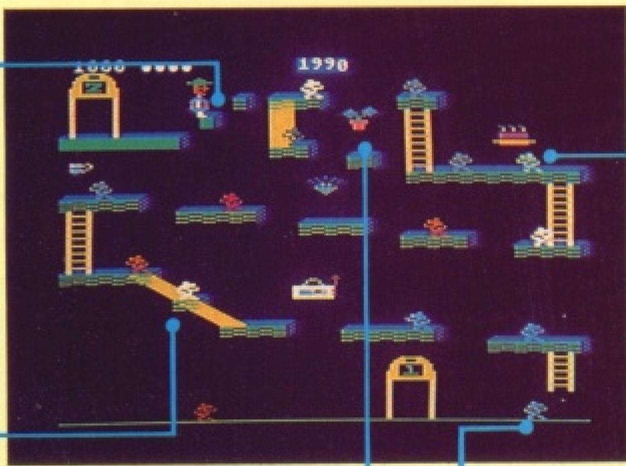
Ahem! Cracking straight in, let's start with your letters. I've a note here from Dave Fisher of Sutton Coldfield (Brrrr!), with a few handy cheats, starting with US Gold's *Raid Over Moscow*. When shooting silos in the second phase, shoot the four small ones then move to the left of the screen and shoot the small plane as many times as you can within the time limit. Hey presto — 1000s of points! Pretty good, but don't you waste a life?

Next up, *Bounty Bob Strikes Back*. Whoever is responsible for these Miner/platform games needs shooting. I can't leave them alone! Anyway, here's Dave's tip to reach the fifth level and find the password. Reach the flowerpot on the first screen then press 1 followed by F7 and you're magically transported to level four. This works like a dream and has all the

My joystick jollies this month are CRL's *Rocky Horror Show*, US Gold's *Bounty Bob Strikes Back* and Ariolasoft's *Realm of Impossibility*.

BOUNTY BOB STRIKES BACK

***Bounty Bob* is a high class platform game set in a mine where, in true kleptomaniac fashion, you must collect selected articles.**



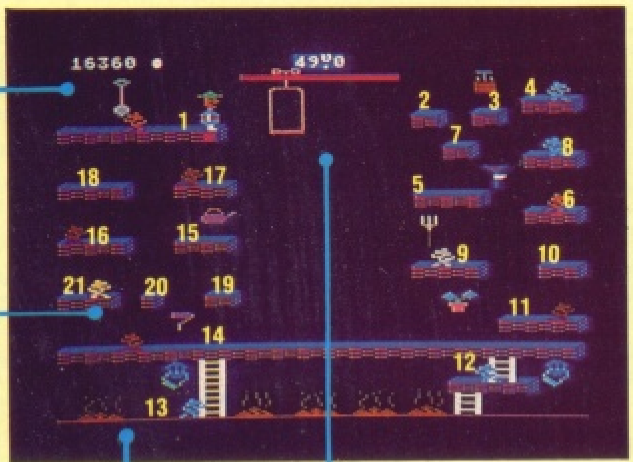
Here's your chance to prove yourself! It's your first tricky jump — master it and you're well on your way. Push Fire to jump, then tap (just a tap) the joystick to the right. Bob's flight is guided — just like missiles shooting through the skies.

Oops, you're stuck! There's no way back up the slide so make sure you cover all the platforms before you slip down it.

Wanna reach Bob's Playroom on screen 4? Then you're gonna have to cheat! Get to this flowerpot and press 1 then F7 to rocket to screen 4.

Ignore the mutants — they waste valuable time.

Don't eat the cake (yummy!) until you've walked along the platform atop the little ladder.



This screen's great practice since most of the jumps are fairly minor (Shouldn't that be 'miner'? Ed)

Grab these mutants by leaping up from underneath them. This is quite a useful technique throughout as it frees platforms from otherwise unzappable weirdos. And trying to eat a treat and get to them via the lift is impossible.

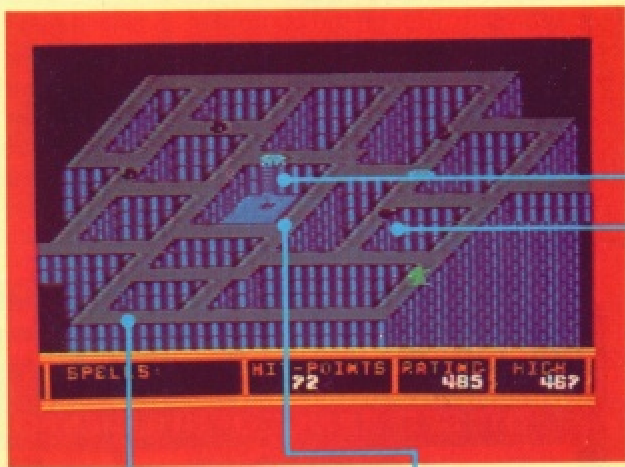
Extra points if you eat this pile of steaming stuff — not for the faint of heart!

When leaping back into the utility hoist (lift), jump straight up. Then shift the joystick in the direcion of the hoist else you perform a fantastic swan dive!

Follow the numbers — these indicate the best route ...

REALM OF IMPOSSIBILITY

In *Realm of Impossibility*, Wistrix, an evil cleric, has stashed the Seven Crowns of Middle Kingdom in the 13 dungeons of his castle.



If this were real 3D you'd have no problem getting through but, since you can only cover the bits of ground you can see, you can easily get stuck!

Scrolls contain spells which be be used to disable your pursuers. Use them to escape from orbs or to get more scrolls. They'll also boost your hit-point tally.



Spiders don't just blunder around like the zombies. They're more cunning. They hang around then pounce so the best way past them is to sprint like crazy.

You don't need to be a Seb Coe clone to outrun these apathetic Zombies! But zig-zagging is a good tactic — moving the joystick left-right will quicken your pace.

hallmarks of a programmer's 'back-door'.

In Elite's *Airwolf*, when leaving the landing cave, wait between the second and third falling rocks (it ain't easy, Dave!) face left and shoot a large hole in the wall. Then, carry on as normal and you shouldn't lose any shields as you return.

And Dave's last tip — *Alice in Videoland*. On the Chess Board, walk up one square then left as far as you can go. Next, go straight up — you'll earn a maximum of 1535 points every time. Magic, Dave — keep 'em comin'!

Our next tipster is Brian Don, who hails from Milngavie, Glasgow and has these bijou cheat-ettes (*Quel pretension! Ed*) to offer. In *Zaxxon* by US Gold (Again? Doesn't anyone buy English games out there?), shoot the planes on the ground in the first phase — this'll give you less to shoot at on the second phase where you should stay as low as possible. On the third phase, fire at the energy shield and walls until your shots go through the gap. And (gasp!) the fourth phase — adjust your altitude by the gauge to one and a half or two, then shoot at the rocket launcher on the robot.

To run faster, and save wear'n'tear on the old joystick, in Ocean's *Daley Thompson's Decathlon* (Ah, that's better, something homegrown!) use CTRL + 2 to run and then Space bar to jump or throw. (You must have very long fingers, Brian!).

In *Star Commando*, by Terminal Software, resist the urge to shoot at the Cosmic Invaders and you'll easily get double fuel from the Mothership.

And finally, in Anirog's *Galaxy*, get captured by the Mothership (another Mothership? Cripes!) and, in sacrificing a life to escape, you ensure double fire power. Cheers, Brian!

Martin Porter of Lincoln wants to know if there is a cheat mode in Activision's *Ghostbusters*. Well, yes there is — but David Crane wouldn't tell me what it was. Help, anybody? On the business of being stomped out of business by the Sta-Puft Marshmallow Man, you trap him by dropping a dollop of Ghost Bait (you start with five, so use it sparingly). The trick is that he only appears when you've just finished busting a ghost so, instead of wasting time by congratulating yourself when your men are walking back to the ambulance with a full trap, keep your finger poised over the B key and watch the screen. Then, when the Marshmallow Man starts to form, quickly hit the key and you'll gain a bonus of $2000 — Woweee! Also, if you use the Ghost Vacuum on the streets, there won't be enough ghosts for him to form.

Those Who Can't, Cheat

Cheats (we prefer to call 'em tips, round here) are always welcome in my mailbox. Anything to get those elusive hi-scores and, especially, 'back-doors'. In case you've been on a remote planet in the Hoth system since birth, a back-door is a routine that the programmer puts into a game so he doesn't have to blast his way through all the levels to test the game's upper reaches. For instance, Jeff Minter's favourite back-door 'keyword' (as we've mentioned before) is GOAT or GOATS, typed in on particular screens. Try out a few obvious phrases on your favourite games and tell me what you find.

High Flyers

That's the mail done — now some hi-scores. Mark Ellis (aged 12) of Billborough, Notts completed *Roland's Rat Race* on 5th May with a score of 73,300. Did anyone else get there first? And Mark Dickenson (aged 14) of Cleveland (no, not Ohio ...) has achieved a megascore of 19,356 in *Impossible Mission*. Is he the youngest to reach this score? I dunno, 14's not so young!

Best Buys

Well, you've had your say — now, it's my turn. Apart from *Bounty Bob* and CRL's *Rocky Horror Show*, my current fave raves are *Sorcery* and the enticingly tricky *Strangeloop* from Virgin, Activision's *Master of the Lamps* and the game to out-Indiana *Indiana Jones and the Lost Kingdom*, Ariolasoft's *Realm of Impossibility*.

And, on the news front, there's a new hairy game on the way. Jeff Minter gave us punters a peek at something called 'sub-games' at the Commodore '85 Show. It's called *Battalyx* and looks really weird (*Yeah ... Ed*). It's due for release soon but, until then, stand by your beasts!

....And Bye-Byes!

Right, that's my lot. All this space has worn me out! But there's more next month so keep those hints and cheats (whoops, tips!) flooding in. And, to make my job even easier, why not write and tell me about *your* fave game? I'll probably disagree but that's cos I'm always right! See you in the hall of fame! 64

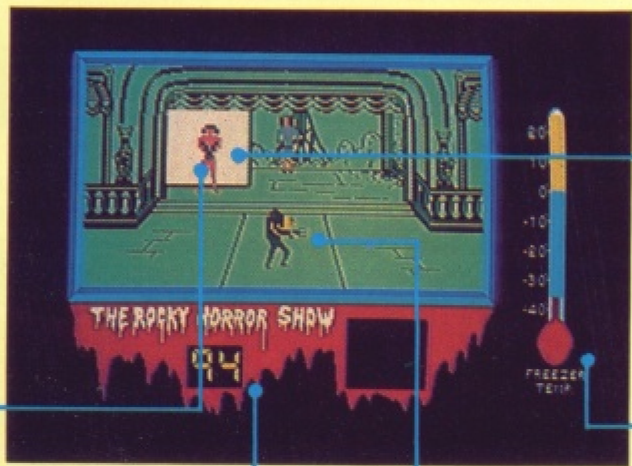
LIZ HEANEY

ROCKY HORROR SHOW

In *Rocky*, you tour evil gender-bender Frank N. Furter's castle in a quest to rescue your loved one.

Ladders are a stumbling block. To avoid getting trapped on them, wiggle the joystick from side to side on your way up.

Orbs are the most awkward beasties to avoid. They're strongly attracted to you so trick them into going one way then go the other.



You play the part of Brad Majors or Janet Weiss — here you're Brad. Beware Frank's minions! If they get you, they strip you naked and you get more than a full-frontal blush! You can't pick up any pieces or hold the keys — thus barring your entry to the other rooms.

Stack the bits of the De-Medusa here. It flashes — and so does Bob!

Watch the countdown! When it reaches zero the castle blasts off into the vast black yonder taking you with it — so time is crucial.

Rascally Riff-Raff, armed with his anti-matter laser, stalks Brad. Take care else he'll zap you before you can escape.

If you want to search the lab/freezer area for a piece of De-Medusa, you'll have problems. You must disable the laser which bars your way by climbing the ladder, pressing the button and tearing across the laser's path. But there's little time to get across so, if you get stuck, don't risk the do or die dash!



When the freezer thermometer hits zero, Eddie, the geezer from the freezer, will zoom out of the fridge and try to run you down on his Harley Davidson. To refreeze him, battle back to the fridge and push the right button.

Crosses stick in the ground and will keep the fiendish thingies from following you. But be on your guard! Spiders can jump over them and orbs just roll around them. So cast a spell or just get out fast.

Be warned — the sprites in this game have a nasty habit of sticking to ladders, walls, stairs and other sprites!

This way to the bedrooms ... but there's no sleeping on the job.

SOFTAID

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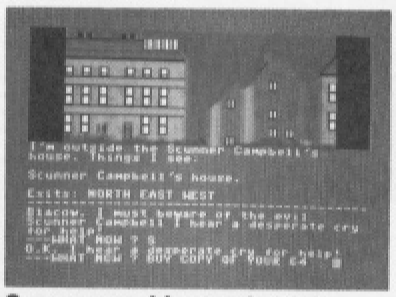
All proceeds to The Bob Geldof Band-Aid Ethiopian Appeal Fund.

MISS ADVENTURE

Got your maps in a muddle? Fret not as Miss Adventure, *the smartest sleuth in the underworld, unleashes another bag of hints and tips to set you on the right course...*

I've spent most of the last month rescuing knights caught with their armour down, but I was persuaded to take a break from such fun-filled pursuits by a couple of releases from Tynesoft and Melbourne House, the first programmed by Brian 'Gremlins' Howarth and the second boasting oodles of locations and a hefty vocabulary.

Supergran



Granny graphics — strange goings-on in the grimy streets up north...

Tynesoft's *Supergran* is a new graphics adventure based on the well-known (?) Tyne Tees TV prog and will thrill anyone who shrieks with delight at the thought of elderly ladies pole vaulting through windows or stuffing their faces full of porridge. In other words, it's unlikely to thrill anyone much over the age of 12 which, to be fair, is exactly what it says on the packaging.

Although I'm not exactly a granny-fancier myself, I have to admit that *Supergran* is OK — hardly surprising when you consider who wrote it. The graphics are very similar in style and quality to those in *Gremlins* and the programming techniques seem almost identical. It falls into the Scott Adams style of game, with few locations but lots of puzzles (some quite tricky) to solve. My only Miss giving is that it may be a bit tricky for the youngsters it's aimed at. I didn't find it a walk-over by any means, but then perhaps that's because I've never watched the program, so pole-vaulting out of the second location wasn't exactly the first solution that sprung to mind!

The vocabulary in *Supergran* is limited and the responses are slightly unhelpful, but the graphics aren't bad and it should thrill quite a few little minds, and perhaps even persuade a few OAP's to take a spot of exercise! If you get stuck in the first couple of locations, try kicking the goal posts and going in for athletics.

Mordon's Quest

Mordon's Quest from Melbourne House is something quite different. The blurb for this program claims that it is by 'the author of *Classic Adventure*', which strikes me as being a little over the top. Any adventurer who knows the ropes will realise that Melbourne House's *Classic Adventure* was simply a conversion (by Abersoft, in fact) of the original mainframe game *Colossal Cave.* To say, therefore, that *Mordon's Quest* is by the same author implies that the text and design of the game will be in some way comparable to its illustrious predecessor, which, dear hearts, it certainly isn't. Crowther and Woods, who programmed and wrote *Colossal Cave*, had a real talent for game design but whoever wrote *Mordon's Quest* still has a lot to learn.

Your quest is to find various parts of a broken Immortality Machine and return it to Uncle Mordon, an aged freak who claims immense powers and springs out of nowhere at the beginning of the game to tell you all you need to know. You then head off into the mist and progress through different time zones, doing things like feeding pygmies to man-eating plants and struggling with Tarzan. You'll also spend quite a bit of time battling with the program, which refuses to tell you which words it doesn't understand, replying instead "You can't" — infuriating when you know you're on the right track but can't quite suss out the exact words expected by the program.

Mordon's Quest will probably go down well with the text-only fanatics, but I felt that it was really a case of trivia on a grand scale — lots of places to go and objects to find, but nothing tremendously enthralling. Those of you who do have a crack at it should make sure you have plenty of puff to deal with the pygmy and remember to take the blanket when you leave the house.

Beatle Quest

Finally, just room to mention a real curiosity. *Beatle Quest* comes from a company called Number 9 Software (*Number 9*, not Level 9, and I reckon the confusion is just a teensy-weensy bit intentional). This Quilled game is really fab and spot-on for obsessive Beatles fans and ex-sixties drop-outs (*yeah, yeah, yeah! Ed*). What other adventure has you finding suspicious sugar cubes hidden inside telephone receivers, and rejects incomprehensible inputs with the immortal line Goo Goo G'Joob?? Way out, man!

So way out, in fact, that I had great difficulty in finding the way out — at least from the first few locations. All of a sudden, my body started doing the hippy hippy shake and then disintegrated in a fit of terminal heavy vibes. Apparently you're a futuristic freak who decides to travel back in time to visit the Land of EMI and get in tune with the Fabulous Four, but since the game is a Quill-clone, and the response times occassionally very slow, it could take a millennia to get through the 150+ locations. Very much recommended for Beatles freaks (and others might well get a few laughs out of it) but it was all a bit too obscure for Miss Adventure.

Adventure Aid

Hmmm, it's funny how almost all the cries for help I get are from boys (of all ages). It only goes to show that us women are generally more resourceful, more intelligent, and less likely to end up as dragon fodder. When was the last time *you* saw a woman languishing in the Goblin's Dungeon?

Stephen Oakes' plea warmed my heart though. "I can't get out of the third room in *Catacombs*," he wails. You are not alone, Stephen. Thousands of others have tried, but to my knowledge only one person in the country (apart from the programmer) has cracked this game. I have this phone number, but will not publish it here (just in case the wires melt with the thousands of calls he will doubtless receive). But if you're really desperate, drop me a line and I'll send you his number.

Stephen O'Reilly and Robert Ashby are among the many lost souls in *Twin Kingdom Valley.* Hot tips may be found below. And Mr Howell can't get the keys from the shed in Level 9's *Lords of Time.* If you had a magnetic personality, Mr Howell, like yours truly, then you'd have no problem, and if you're short on attraction, reflect a little on matters horticultural.

As for the rest of you, I may be immortal but I'm still subject to the laws of space and time, and therefore unable to answer all your queries. Do keep writing, though, and I'll do my best to fit as many of you in as I can — meanwhile check out the Hall of Heroes below — there may well be someone there who can help. Tony Treadwell, for example, (at the top of the list) runs an informal adventure club offering help on all varieties of games. And don't forget, if you write to a fellow adventurer/ess, remember to include an SAE if you expect a reply.

Twin Kingdom Valley

- To kill the dragon, you need the wooden staff. Use the broad sword for lurkers.
- If the giant is too ill to be of any use to you, take him for a swim in the lake (and go for one yourself if you haven't already).
- The Secret of Life is something you can carry and examine!

Hall of Heroes

- Help for the stricken, maps for the lost, and hope for the helpless offered to all adventurers by the immortal heroes and heroines below:

All games
Tony Treadwell, 41 Fernhill Road, Bedbroke, Oxford, OX5 1RR, Tel: 08675 6670.

Dragonsworld
Mrs L Leech, Tel: 0942 606900 7-10pm.

Gremlins
Nicholas Ramsden, 11 St Marys Close, Littlehampton, Sussex, BN17 5QQ.

Castle of Terror
A Hamilton, 13 Inglewood Park, Bangor, Co Down, N Ireland, BT20 3EX.

Mission Om
Shaun McEwan, 4 Sanda Place, Wardneuk, Kilmarnock, Ayrshire, KA3 2JZ.

Time Machine, Feasibility Experiment, Adventureland
Miss M Hendriksen, Uilenstede 248, 1183 AR Amstelveen, Holland, Tel (from UK): 01-03120433578.

Calling All Adventurers

Whatever location you may currently be exploring, spare a thought for those less fortunate than yourself. Someone, somewhere out there, is waiting for a tip from you and you can put them out of their misery (and achieve everlasting fame and fortune into the bargain) by writing in to the Miss Adventure Helpline. Don't delay! Write in to Miss Adventure and put yourself on the map today. All correspondence (on postcards, please) together with your name and address, to Miss Adventure's Hall of Heroes, Your 64, 14 Rathbone Place, LONDON W1P 1DE.

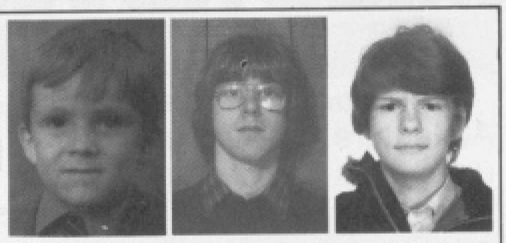
Y64 TOP TEN CLASSICS



Tony Groves £327,600 | John Edmunds £999,999 | G Hugill £999,999

1 (1) **GHOSTBUSTERS** ACTIVISION

2 (up from 3) **INTERNATIONAL SOCCER** COMMODORE



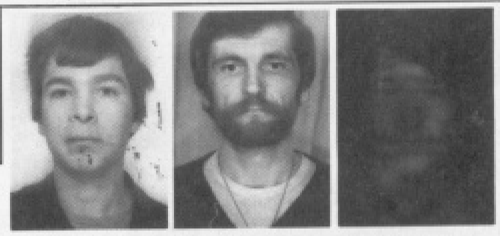
Steve Mulholland 15-0 (level 9) | Alex Booth 13-0 (level 9) | Jonathan Smith 11-0 (level 9)



Andrew Sutton 28,237 | Adam Bell 29,860 | David Edwards 29,883

3 (up from 6) **IMPOSSIBLE MISSION** CBS/EPYX

4 (up from 5) **BEACH HEAD** US GOLD



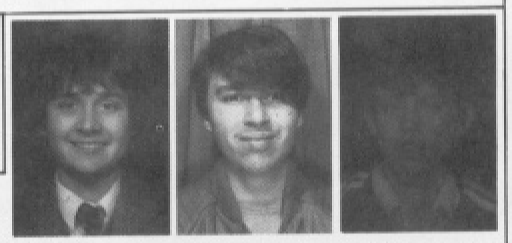
D Reynard 798,600 | P Eves 765,256 | William Love 720,000



Dave Bartos 338,900 | Kevin Cox 496,400 | David Burney 520,200

5 (down from 4) **RAID OVER MOSCOW** US GOLD

6 (down from 5) **STAFF OF KARNATH** ULTIMATE



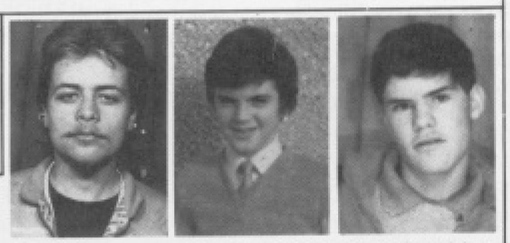
G Hugill 6.39 pm | Andrew Grifo 6.42 pm | Gary Patterson 6.43 pm



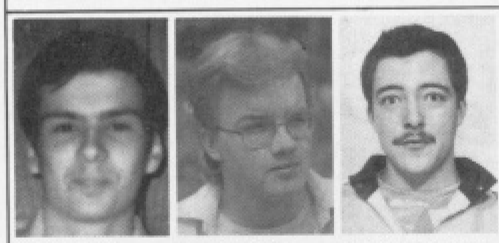
Michael Sherling 577,000 | Graham Burgess 585,800 | Andy Clarke 691,575

7 (7) **BRUCE LEE** US GOLD

8 NEW **TAPPER** SEGA



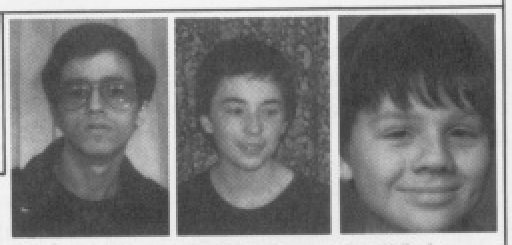
J P Willis 1,326,600 | Richard Jones 1,045,125 | Mark Cassidy 1,009,975



Neil Barry 107,020 | Andy Clarke 120,370 | David Edwards 123,650

9 NEW **POLE POSITION** US GOLD

10 NEW **BOULDERDASH** STATESOFT



Andrew Waller 40,754 | Paul Taylor 38,160 | Benji Dale 32,880

Y64 TOP TEN HOT SHOTS

1	(1)	**INTERNATIONAL BASKETBALL**	COMMODORE
2	(2)	**IMPOSSIBLE MISSION**	CBS/EPYX
3	NEW	**PITSTOP II**	CBS/EPYX
4	down from 3	**ELITE**	FIREBIRD
5	down from 4	**CAULDRON**	PALACE
6	NEW	**ENTOMBED**	ULTIMATE
7	NEW	**EVERYONE'S A WALLY**	MIKRO-GEN
8	down from 7	**SOFTAID**	QUICKSILVA
9	NEW	**THE DAMBUSTERS**	US GOLD
10	NEW	**SHADOWFIRE**	BEYOND

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1 ....
2 ....
3 ....
4 ....
5 ....

The next games that I'm getting hold of are:

1 ....
2 ....
3 ....
4 ....
5 ....

My top scores are:*

1 ....
2 ....
3 ....
4 ....
5 ....

*Please specify level of difficulty

Stick your photograph here if you are going for the High Scores Chart

And this is who I am:

Name ....

Address ....

....

.... Postcode ....

Independent witness*

Name ....

Address ....

....

.... Postcode ....

*Must be over 18

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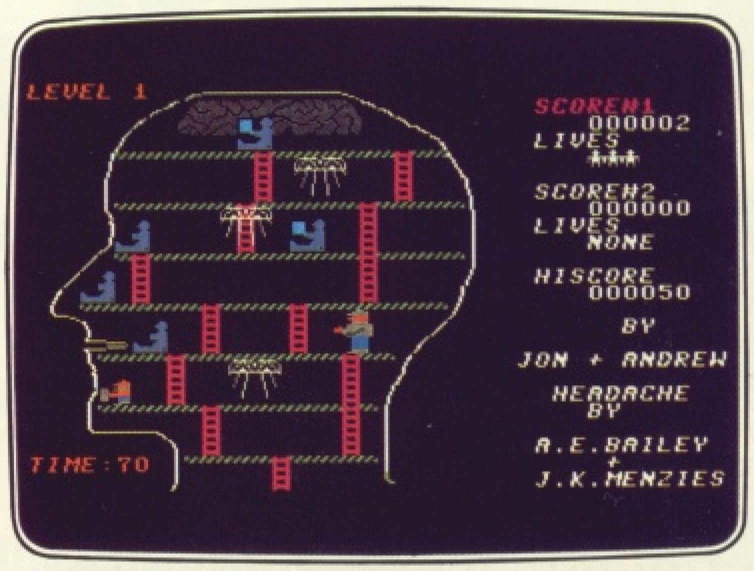
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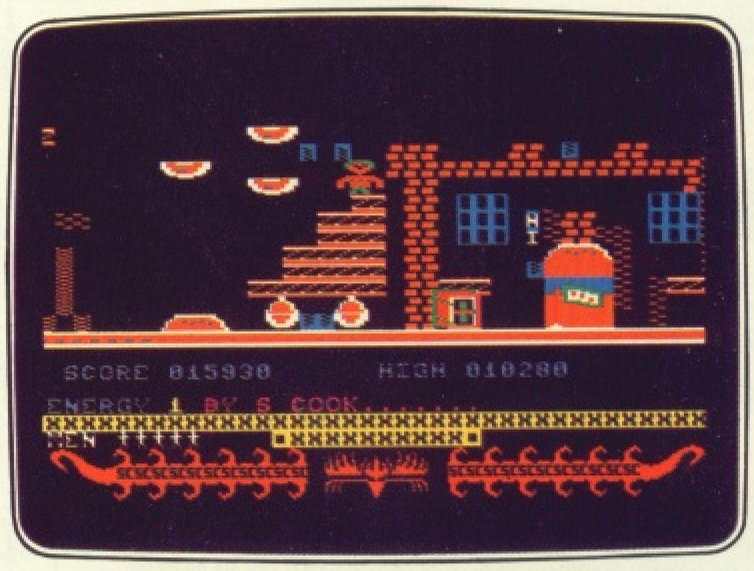
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BRIGHT SPARK!

Confuzion is arcade action with enough fast thinking to fuze the grey matter together. Max Phillips managed to wrap his tiny mind round his joystick ...

Even Guy Fawkes would have trouble believing the plot. Something about defuzing bombs in an eight storey building, each with eight sections, by sliding pallets of fuze wire around the floor. Refuze to swallow it — Incentive's new game is actually a sliding letter puzzle gone crazy. Each of the tiles in each level is marked with a pattern of paths — curves, straights, crossroads and so on. Slide 'em around to guide your spark onto each bomb before your time runs out. And watch out because some levels have water drops that kill your spark on contact and holes where you can't slide your tiles as well as very awkward shaped sparkways. The worst of these is a diamond-shaped crossroad where the spark can leave in one of two directions. Incentive hints that they are random but they nearly always go whichever way you don't want.

Of course, you could call it a puzzle and forget about it. Don't be fooled — this is fast moving as well as fast thinking. It's true that, in the end, you do work out 'solutions' to each screen. But getting there isn't half fun. Do you study it first and plan a route? Do you blaze in and try and bounce the spark across? Close your eyes and think of England? Every screen has some devious departure on the theme and you'll need to work out a suitable tactic for each.

Apparently innocent looking screens take ages to suss out simply because they're made up entirely of curves or straights and so on, let alone those where getting to the bombs is easy but the main objective becomes shoving three droplets out of harm's way. Incidentally, the flash demo option has got some trick looking strategies in it. They might give you ideas but most turn out to be far too slow in practice.

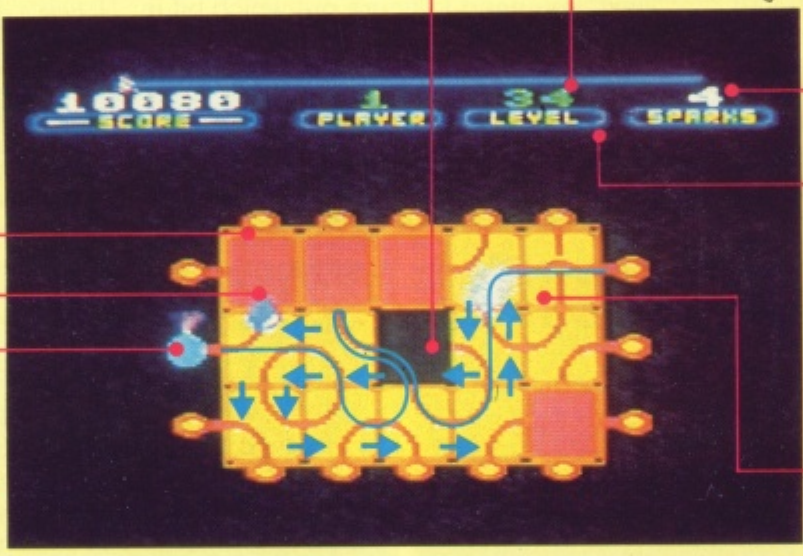
For £6.95 it's also a pretty neat piece of coding. Try this — to answer a yes/no question you shake the joystick left to right for no and nod it up and down for yes. You also get some great music — a band called Private Property on the SID chip (and the real thing on the flip-side — some people will do anything to sell tapes). It'll hurt your brain and blister your fingers but it's one game that won't bomb. 6 4

Tight Squeeze

This is 34 — one of the narrow-squeeze screens. You've got to shove the droplet onto the bottom row, shuffle everything along and slide the spark home. Make a mistake and the culs-de-sac will get you every time.

Don't create dead-ends — it takes years off your half-life.

Watch out for holes — you can't move tiles into them and it really hurts trying to think round them.



You get four sparks per game and an extra one every four levels, introduced with some fab graphics.

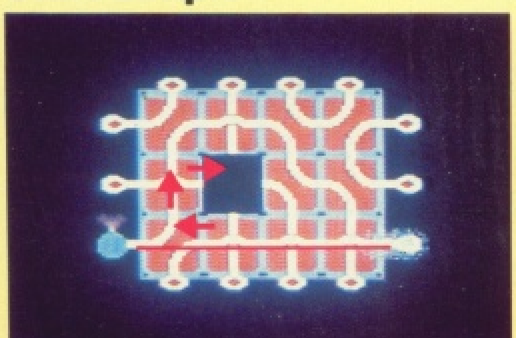
The teardrop explodes. Or worse, it puts a damper on your spark if you let it run into you ...

How do you do 64 of these things? The great thing is that you can start at any one of eight levels and so explore the whole game ...

Defuzing a bomb bumps your time up. On some screens you've got to do the bombs in the right order to create the time to do them all.

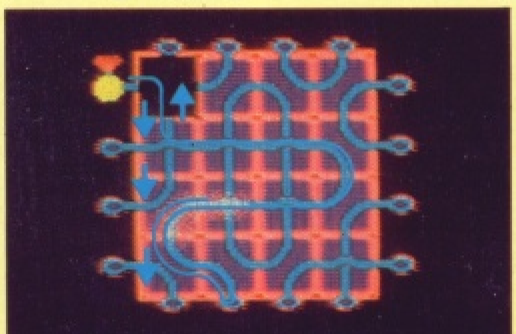
Your spark ambles along quite slowly. Inject a little speed by hitting Fire once you've got a route sorted out.

Start Simple



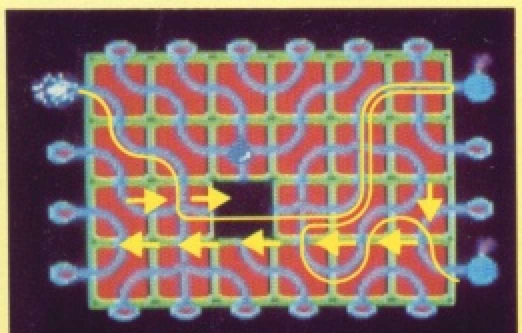
A dead easy start — give the spark a clear run with a right and an up then hold Fire down. When it's on the last tile, slide left to get the bomb.

Rolling Along



A bit lazy here. Let the spark roll round on to the top of the loop, pull down three times, let the light of your life meander gently back, a quick slide and you're there!

Short Cut



This one's murder if you mess it up but a cinch for the think ahead brigade. It takes two rights to get the first bomb. As the spark is on its way, shuffle left and finally pull down. Hold Fire and watch the second one go ...

GET PLOTTED!

Can't get into 64 graphics? Steve Colwill*'s ready made hi-res routines give you the key ...*

The 64's graphics may give you great pictures, but its Basic is too slow to seriously exploit 64 hi-res. Fear not! Armed with this two-part article, you will be able to release the picture power lurking inside your 64 and wave goodbye forever to grouchy graphics!

The machine code routines, which can be called from your Basic programs, will provide you with everything you need to plot points and draw lines or circles on the hi-res graphics screen. But if you run for cover at the very sound of the words 'machine code' then take refuge in the Basic loader program. This lets you use the routines without going near a single byte.

So what's on this month? Well, by the time you've ploughed through this article, you should be able to set up hi-res mode, switch between hi-res and text modes, plot or unplot points and test if a particular point is on. Not bad for à bit of typing!

Let's start with an outline of how the hi-res display works. The normal text screen is a doddle — it consists of 1000 bytes of 25 rows × 40 columns. Each byte represents a position on the screen and holds a screen code number that tells the video chip (VIC) which character is in that position. The first location holds the character in the top left of the screen, the next holds the second character in the first line, the next holds the third and so on for each row of the screen. But the hi-res screen is much flashier!

Since it holds a fancier pic, it needs more memory — 8000 bytes to be precise. What's more, as you'll see from the diagram, it is organised in a none too obvious manner. So how do you make your mark on the screen? Every point has its co-ordinates X and Y — X is how many dots across the screen the point is from 0 to 319 and Y is how many dots down from 0 to 199. From the co-ordinates, you can work out which bit to set.

Stage one is to figure out which byte the point is in:

Byte Address =
BASE+INT(Y/8)•320+INT(X/8)Z•8+(Y AND 7)

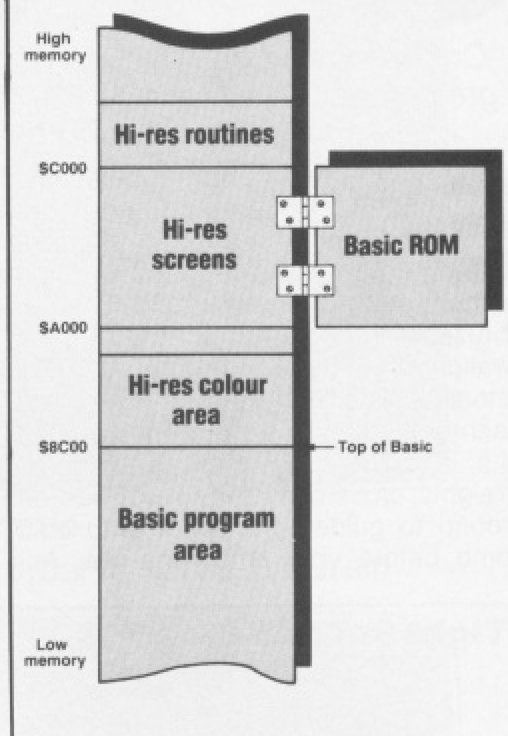
Next, you need to figure out which bit in that byte is the bit you want:

Bit Position = 2↑ 7-(X AND 7)

The machine code routine ADDCLC does all this. It leaves the address of the byte in locations $FB and $FC and the bit position is held in $C00F. It then fetches the relevant byte, turns the relevant bit on using OR so's not to disturb the other bits in the byte and then pops the byte back in memory. Hey presto — you've made your point!

Now In Colour

So far so good but we've been keeping quiet about colour. In hi-res mode, the



Where It's At

Here's where the machine code routine places the hi-res screen. The screen map is in the RAM under the Basic ROM. Whenever you call the routine, it bank-switches Basic out of the way to access the map and then switches Basic back in before returning to your program. The colour map area has to be below this and occupies memory from $8C00 onwards.

```
10 REM **** C64 HIRES SETUP AND PLOT ***
*
20 REM ****   ROUTINE BASIC LOADER   ***
*
30 FORI=49168 TO 49543:READ A:POKE I,A:C
C=CC+A:NEXT I
40 READ CS:IF CC<>CS THEN PRINT"CHECKSUM
 ERRO":STOP
100 DATA173,0,192,240,57,169,0,133,251
110 DATA169,140,133,252,162,3,160,0
120 DATA173,1,192,145,251,136,208,251
130 DATA230,252,202,48,8,208,244,145
140 DATA251,160,231,208,238,169,0,133
150 DATA251,169,160,133,252,162,32,160
160 DATA0,169,0,145,251,136,208,251
170 DATA230,252,202,208,246,173,2,221
180 DATA9,3,141,2,221,173,0,221,41,252
190 DATA9,1,141,0,221,169,140,133,56
200 DATA169,56,141,24,208,173,17,208,9
210 DATA32,141,17,208,76,147,192,173,2
220 DATA221,9,3,141,2,221,173,0,221,41
230 DATA252,9,3,141,0,221,169,20,141
240 DATA24,208,173,17,208,41,223,141
250 DATA17,208,96,32,129,193,32,211
260 DATA192,173,1,192,160,0,145,253
270 DATA160,0,173,15,192,174,2,192,240
280 DATA7,17,251,145,251,76,129,193,73
290 DATA255,49,251,145,251,76,129,193
300 DATA32,129,193,32,211,192,160,0
310 DATA177,253,141,6,192,177,251,45
320 DATA15,192,141,7,192,76,129,193
330 DATA173,4,192,141,9,192,173,3,192
340 DATA41,248,141,8,192,173,3,192,41
350 DATA7,141,10,192,173,5,192,170,41
360 DATA7,141,12,192,138,74,74,74,141
370 DATA11,192,169,0,141,13,192,24,109
380 DATA11,192,109,11,192,109,11,192
390 DATA109,11,192,109,11,192,141,14
400 DATA192,74,110,13,192,74,110,13
410 DATA192,170,173,13,192,24,109,8
420 DATA192,168,138,109,9,192,170,138
430 DATA24,105,160,170,152,24,109,12
440 DATA192,168,138,105,0,133,252,132
450 DATA251,169,1,141,15,192,56,169,7
460 DATA237,10,192,240,7,170,14,15,192
470 DATA202,208,250,173,4,192,74,110,3
480 DATA192,74,110,3,192,74,110,3,192
490 DATA24,105,140,141,4,192,169,0,14
500 DATA14,192,42,14,14,192,42,14,14
510 DATA192,42,170,173,3,192,24,109,14
520 DATA192,133,253,138,109,4,192,133
530 DATA254,96,165,1,73,1,133;1,96
540 DATA45563:REM*CHECKSUM*
```

Run this to load the machine code without getting your fingers dirty. Be careful with your typing and SAVE it before running it — crashing your 64 after typing this in might cause offence!

```
10 REM **** HIRES PLOT TEST ****
20 POKE49153,3:REM SET INITIAL COLOUR
30 POKE49152,1:SYS49168:REM CLEAR SCREEN
```

colours for the screen are held separately in a block of memory arranged just like the normal text screen. Here, each byte holds the foreground and background colours for each group of eight hi-res screen bytes. So although you can only have two colours in any one group of eight bytes, you can vary the colours from group to group.

Hatching a Plot

Here's how to call the various routines from your own program.

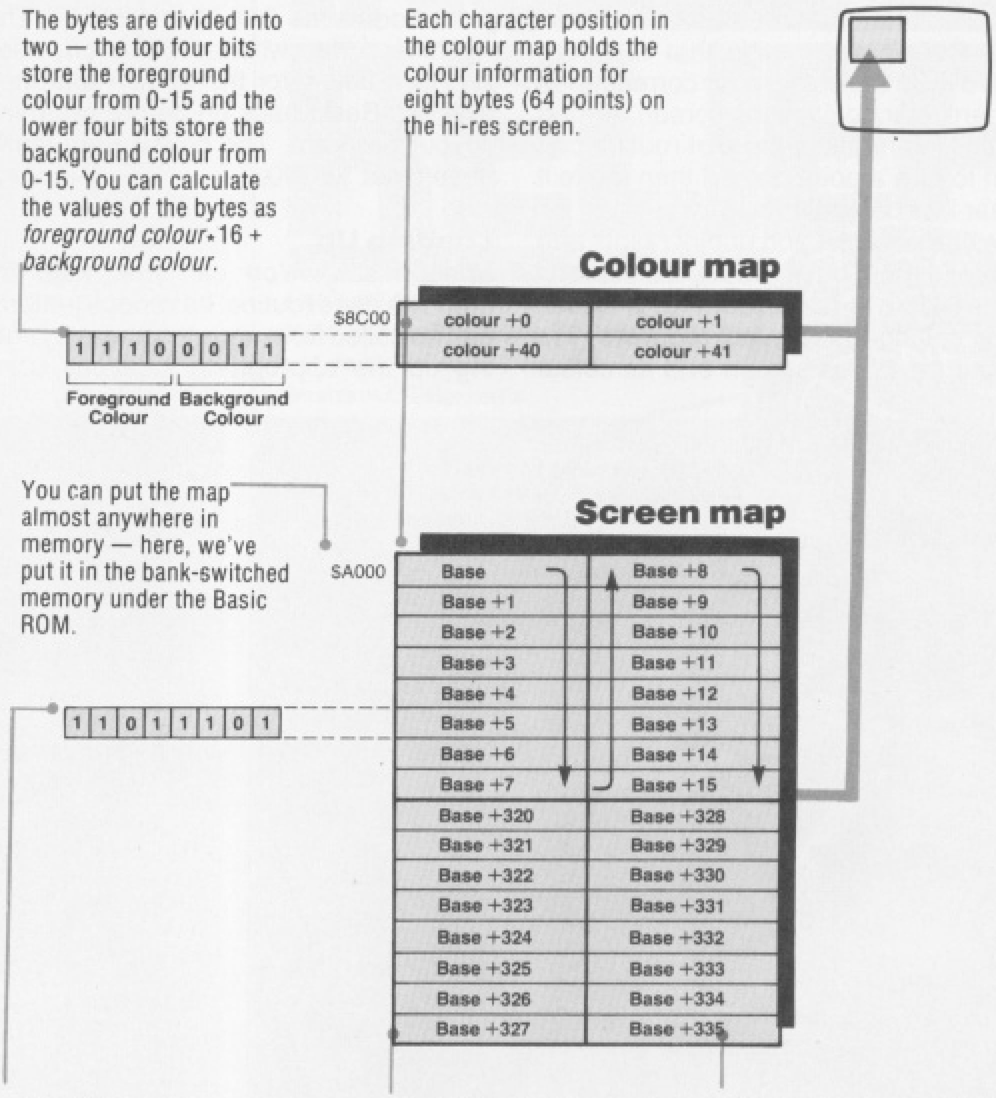
- To switch to hi-res mode: SYS 49168
POKE 49152 with 1 beforehand and the screen will clear. POKE it with 0 and the 64 will switch to hi-res without destroying any display already there. You can use this POKE to switch back and forth between text mode and hi-res mode without wrecking your hi-res pic.
- To switch back to text mode: SYS 49268
- To set the foreground and background colour for the plot, POKE 49153 with a colour code. The colour code is *foreground colour**16 + *background colour*.
- Plot and Unplot: SYS 49300
First, POKE the Y co-ordinates of the point into location 49157. Since the X co-ordinate can be from 0 to 319, it needs to be split into two and POKEd into locations 49155 and 49156. The subroutine at line 1000 in the demo program does this for you! Finally, POKE 49154 with 1 to plot the point and with 0 to unplot it.
- To test a point: SYS 49339
POKE 49155, 49156 and 49159 with the co-ordinates of the point to test, as for plot and unplot above. On returning from the routine, PEEK (49158) AND 15 gives you the colour of the point and INT(PEEK(49158)/16) gives you the background colour it is on. If PEEK(49149) is greater than zero the point is on, if it is zero, the point is turned off.

Hi-res Uncovered

The bytes are divided into two — the top four bits store the foreground colour from 0-15 and the lower four bits store the background colour from 0-15. You can calculate the values of the bytes as *foreground colour**16 + *background colour*.

Each character position in the colour map holds the colour information for eight bytes (64 points) on the hi-res screen.

You can put the map almost anywhere in memory — here, we've put it in the bank-switched memory under the Basic ROM.



Each bit in screen memory corresponds to a single-dot on the screen. If a 1 is stored there the dot is on, if it's a 0 the dot is off.

One byte holds 8 bits and therefore represents 8 dots on the screen.

Rather than progressing in any obvious fashion, the bytes are arranged in character-sized groups of eight.

```
40 POKE49154,1:REM SET PLOT MODE
44 GOSUB 3000:REM DRAW SQUARES
50 SYS 49268:REM BACK TO NORMAL SCREEN
55 PRINT"♥AND NOW UNPLOT THE POINTS"
57 GET A$:IF A$="" THEN 57:REM WAIT FOR
KEYPRESS
60 POKE49152,0:SYS49168:REM BACK TO HIRE
S BUT NO CLEAR
80 POKE49154,0:REM UNPLOT
85 GOSUB 3000:REM UNDRAW SQUARES
100 SYS 49268:REM BACK TO NORMAL SCREEN
105 PRINT"♥NOW TEST POINT FUNCTION"
200 GET A$:IF A$="" THEN 200:REM WAIT FO
R KEYPRESS
205 POKE49154,1:REM SET PLOT MODE
210 X=100:Y=100:GOSUB 1000:REM PLOT A PO
INT
215 POKE49152,0:SYS49168:REM BACK TO HIR
ES BUT NO CLEAR
220 GET A$:IF A$="" THEN 220:REM WAIT FO
R KEYPRESS
230 SYS 49268:REM BACK TO NORMAL SCREEN
235 GOSUB 2000:REM CALL POINT
240 PRINT"LOC 49158 HOLDS POINT COLOUR:"
;PEEK(49158)
250 PRINT"LOC 49159 HOLDS BIT POSITION:"
;PEEK(49159)
260 END
1000 REM **** PLOT ROUTINE ****
1010 XHI=INT(X/256):XLO=X-256*XHI
1020 POKE49155,XLO:POKE49156,XHI:POKE491
57,Y
1030 SYS49300:REM  CALL M/C PLOT
1040 RETURN
2000 REM **** CALL POINT ****
2005 XHI=INT(X/256):XLO=X-256*XHI
2010 POKE49155,XLO:POKE49156,XHI:POKE491
57,Y
2020 SYS49339:REM CALL M/C POINT
2030 RETURN
3000 REM **** TEST SQUARE ****
3005 R=RND(-1)
3006 FOR I=1 TO 5
3007 POKE49153,3+16*INT(RND(1)*16):REM S
ET COLOUR
3008 S=INT(RND(1)*30)+10:REM SELECT SQUA
RE SIDE
3009 XS=INT(RND(1)*(320-S)):YS=INT(RND(1
)*(150-S))
3010 Y=YS+S:FOR X=XS TO XS+S:GOSUB 1000:
NEXT X
3020 Y=YS:FOR X=XS TO XS+S:GOSUB 1000:NE
XT X
3030 X=XS:FOR Y=YS TO YS+S:GOSUB 1000:NE
XT Y
3040 X=XS+S: FOR Y=YS TO YS+S:GOSUB 1000
:NEXT Y
3045 NEXT I
3050 RETURN
```

Run this once you've got the machine code routines loaded to see them at work!

GET PLOTTED!

COLCLC is the routine that sorts out which byte in the colour map corresponds to a particular point on the screen. Armed with this information, the plot routine can go on to turn a point on and then make it appear in a particular colour.

We can now plot and unplot points and even read them back. But we still haven't got the 64 into hi-res mode. This is the fun bit! By setting the relevant registers, you can put the hi-res screen and its colour area anywhere you choose. In order to keep your Basic program space as big as possible, we've been nice enough to put it in the RAM underneath the Basic ROM (from addresses $A000 to $BFFF). The machine code switches Basic off, uses the RAM below for the screen and then switches Basic back on before returning to your program. The colour area starts close by at $8C00.

Loading Up

Enough said. You can now load the machine code routine. Its various features can be called from your programs by setting up the appropriate locations using POKEs and calling the routine with SYS. If you have an assembler, enter the source code and assemble it into memory before running the demo program to test it.

If not, type in the Basic loader — the DATA statements hold the same program. Remember to save the loader before running it. And, if the screen flashes 'checksum error', check the DATA statements — that's where you've blundered! If all is clear, type NEW and enter the demo program to test the routine. And to save yourself going through all that again, be sure to keep the working versions of the program as next month's routines will rely on it. 64

```
0600                ;**********************
0003                ;**********************
0000                ;**  HIRES SETUP    **
0003                ;**  AND PLOTTING   **
0000                ;**  ROUTINE FOR    **
0000                ;**  COMMODORE 64   **
0000                ;**********************
0000                ;**********************
0000                ;
0000                ;
0000                PTR    =$FB
0000                COLPTR =$FD
0000                MPBLO  =$00
0000                MPBHI  =$A0
0000                SCBLO  =$00
0000                SCBHI  =$8C
0000                SCBLK  =$03
0000                SCREM  =$E7
0000                MPBLK  =$20
0000                *=$C000
C000                ;++++ REGISTERS USED BY ROUTINE +
C000                CLRFLG *=*+1
C001                COLOUR *=*+1
C002                PLTFLG *=*+1

C003                XLO    *=*+1
C004                XHI    *=*+1
C005                YLO    *=*+1
C006                PNTCOL *=*+1

C007                PNTON  *=*+1

C008                HBLO   *=*+1
C009                HBHI   *=*+1
C00A                REMX   *=*+1
C00B                VBYTE  *=*+1
C00C                REMY   *=*+1
C00D                ROWLO  *=*+1
C00E                ROWTMP *=*+1
C00F                BPOS   *=*+1
C010                ;++++ SWITCH TO HIRES MODE ++++
C010                ;++++ AND CLEAR BITMAP AREA++++
C010  AD 00 C0      START  LDA CLRFLG
C013  F0 39                BEQ HRESON
C015                ;++++ COLOUR SCREEN AREA ++++
C015  A9 00                LDA #SCBLO
C017  85 FB                STA PTR
C019  A9 8C                LDA #SCBHI
C01B  85 FC                STA PTR+1
C01D  A2 03                LDX #SCBLK
C01F  A0 00                LDY #$00
C021  AD 01 C0             LDA COLOUR
C024  91 FB         AGAIN  STA (PTR),Y
C026  88                   DEY
C027  D0 FB                BNE AGAIN
C029  E6 FC                INC PTR+1
C02B  CA                   DEX
C02C  30 08                BMI CLRBM
C02E  D0 F4                BNE AGAIN
C030  91 FB                STA (PTR),Y
C032  A0 E7                LDY #SCREM
C034  D0 EE                BNE AGAIN
C036                ;++++ CLEAR BITMAP AREA ++++
C036  A9 00         CLRBM  LDA #MPBLO
C038  85 FB                STA PTR
C03A  A9 A0                LDA #MPBHI
C03C  85 FC                STA PTR+1
C03E  A2 20                LDX #MPBLK
C040  A0 00                LDY #$00
C042  A9 00                LDA #$00
C044  91 FB         NEXT   STA (PTR),Y
C046  88                   DEY
C047  D0 FB                BNE NEXT
C049  E6 FC                INC PTR+1
C04B  CA                   DEX
C04C  D0 F6                BNE NEXT
C04E                ;
C04E                ;++++ SET BIT MAP MODE ++++
C04E  AD 02 DD      HRESON LDA $DD02
C051  09 03                ORA #$03
C053  8D 02 DD             STA $DD02
C056  AD 00 DD             LDA $DD00
C059  29 FC                AND #$FC
C05B  09 01                ORA #$01
C05D  8D 00 DD             STA $DD00
C062  A9 8C                LDA #$8C
C062  85 38                STA $38
C064  A9 38                LDA #$38
C066  8D 18 D0             STA $D018
C069  AD 11 D0             LDA $D011
C06C  09 20                ORA #$20
C06E  8D 11 D0             STA $D011
C071  4C 93 C0             JMP EXIT
C074                ;++++ RESET TO NORMAL SCREEN ++++
C074  AD 02 DD      RESET  LDA $DD02
C077  09 03                ORA #$03
C079  8D 02 DD             STA $DD02
C07C  AD 00 DD             LDA $DD00
C97F  29 FC                AND #$FC
C081  09 03                ORA #$03
C083  8D 00 DD             STA $DD00
C086  A9 14                LDA #$14
C088  8D 18 D0             STA $D018
C08B  AD 11 D0             LDA $D011
C08E  29 DF                AND #$DF
C090  8D 11 D0             STA $D011
C093  60            EXIT   RTS
C094                ;++++ PLOT/UNPLOT ROUTINE ****
C094  20 81 C1      PLOT   JSR BANK
C097  20 D3 C0             JSR ADDCLC
C09A  AD 01 C0             LDA COLOUR
C09D  A0 00                LDY #$00
C09F  91 FD                STA (COLPTR),Y
C04C  D0 F6                BNE NEXT
C0A1  A0 00                LDY #$00
C0A3  AD 0F C0             LDA BPOS
C0A6  AE 02 C0             LDX PLTFLG
C0A9  F0 07                BEQ UNPLOT
C0AB  11 FB                ORA (PTR),Y
C0AD  91 FB                STA (PTR),Y
C0AF  4C 81 C1             JMP BANK
C0B2  49 FF         UNPLOT EOR #$FF
C0B4  31 FB                AND (PTR),Y
C0B6  91 FB                STA (PTR),Y
C0B8  4C 81 C1             JMP BANK
C0BB                ;++++ GET POINT ATTRIBUTES ++++
C0BB  20 81 C1      POINT  JSR BANK
C0BE  20 D3 C0             JSR ADDCLC
C0C1  A0 00                LDY #$00
C0C3  B1 FD                LDA (COLPTR),Y
C0C5  8D 06 C0             STA PNTCOL
C0C8  B1 FB                LDA (PTR),Y;GET
C0CA  2D 0F C0             AND BPOS
C0CD  8D 07 C0             STA PNTON
C0D0  4C 81 C1             JMP BANK
C0D3                ;
C0D3                ;++++ HIRES PLOT CALCULATION ++++
C0D3  AD 04 C0      ADDCLC LDA XHI
C0D6  8D 09 C0             STA HBHI
C0D9  AD 03 C0             LDA XLO
C0DC  29 F8                AND #$F8
C0DE  8D 08 C0             STA HBLO
C0E1  AD 03 C0             LDA XLO
C0E4  29 07                AND #$07
C0E6  8D 0A C0             STA REMX
C0E9                ;++++ CALULATE VERT BYTE ++++
```

```
C0E9  AD 05 C0          LDA YLO
C0EC  AA                TAX
C0ED  29 07             AND #$07
C0EF  8D 0C C0          STA REMY
C0F2  8A                TXA
C0F3  4A                LSR A
C0F4  4A                LSR A
C0F5  4A                LSR A
C0F6  8D 0B C0          STA VBYTE
C0F9              ;++++ CALCULATE ROW ++++
C0F9  A9 00             LDA #$00
C0FB  8D 0D C0          STA ROWLO
C0FE  18                CLC
C0FF  6D 0B C0          ADC VBYTE
C102  6D 0B C0          ADC VBYTE
C105  6D 0B C0          ADC VBYTE
C108  6D 0B C0          ADC VBYTE
C10B  6D 0B C0          ADC VBYTE
C10E  8D 0E C0          STA ROWTMP
C111  4A                LSR A
C112  6E 0D C0          ROR ROWLO
C115  4A                LSR A
C116  6E 0D C0          ROR ROWLO
C119  AA                TAX
C11A              ;++++ ADD HORIZONTAL BYTE ++++
C11A  AD 0D C0          LDA ROWLO
C11D  18                CLC
C11E  6D 08 C0          ADC HBLO
C121  A8                TAY
C122  8A                TXA
C123  6D 09 C0          ADC HBHI
C126  AA                TAX
C127              ;++++ ADD HIRES MAP BASE ++++
C127  8A                TXA
C128  18                CLC
C129. 69 A0             ADC #MPBHI
C12B  AA                TAX
C12C              ;++++ ADD REMAINDER OF YLO ++++
C12C  98                TYA
C12D  18                CLC
C12E  6D 0C C0          ADC REMY
C131  A8                TAY
C132  8A                TXA
C133  69 00             ADC #$00
C135              ;++++ SET UP 0 PAGE PTR ++++
C135  85 FC             STA PTR+1
C137  84 FB             STY PTR
C139              ;++++ CALCULATE PIXEL POSN ++++
C139  A9 01             LDA #$01
C13B  8D 0F C0          STA BPCS
C13E  38                SEC
C13F  A9 07             LDA #$07
C141  ED 0A C0          SBC REMX
C144  F0 07             BEQ COLCLC
C146  AA                TAX
C147  0E 0F C0    POWER ASL BPOS
C14A  CA                DEX
C14B  D0 FA             BNE POWER
C14D              ;
C14D              ;++++ CALC COLOUR MAP ADDRESS +++
C14D  AD 04 C0    COLCLC LDA XHI
C150  4A                LSR A
C151  6E 03 C0          ROR XLO
C154  4A                LSR A
C155  6E 03 C0          ROR XLO
C158  4A                LSR A
C159  6E 03 C0          ROR XLO
C15C  18                CLC
C15D  69 8C             ADC #SCBHI
C15F  8D 04 C0          STA XHI
C162  A9 00             LDA #$00
C164  0E 0E C0          ASL ROWTMP
C167  2A                ROL A
C168  0E 0E C0          ASL ROWTMP
C16B  2A                ROL A
C16C  0E 0E C0          ASL ROWTMP
C16F  2A                ROL A
C170  AA                TAX
C171  AD 03 C0          LDA XLO
C174  18                CLC
C175  6D 0E C0          ADC ROWTMP
C178  85 FD             STA COLPTR
C17A  8A                TXA
C17B  6D 04 C0          ADC XHI
C17E  85 FE             STA COLPTR+1
C180  60                RTS
C181              ;
C181              ;+++++ BANK BASIC ROM IN/OUT ++++
C181  A5 01       BANK  LDA $01
C183  49 01             EOR #$01
C185  85 01             STA $01
C187  60                RTS
C188              .END
```

This is the assembly listing for the hi-res routines. Use it with your assembler or just have a butchers to see how it works.

WHO PLAYS THE FAIRIE MAN?

Elidon is a mystery world of over three hundred rooms. Teresa Maughan, Alison Hjul, Max Phillips *and others rallied round to help Tinkerbell on her treacherous trials through the underworld...*

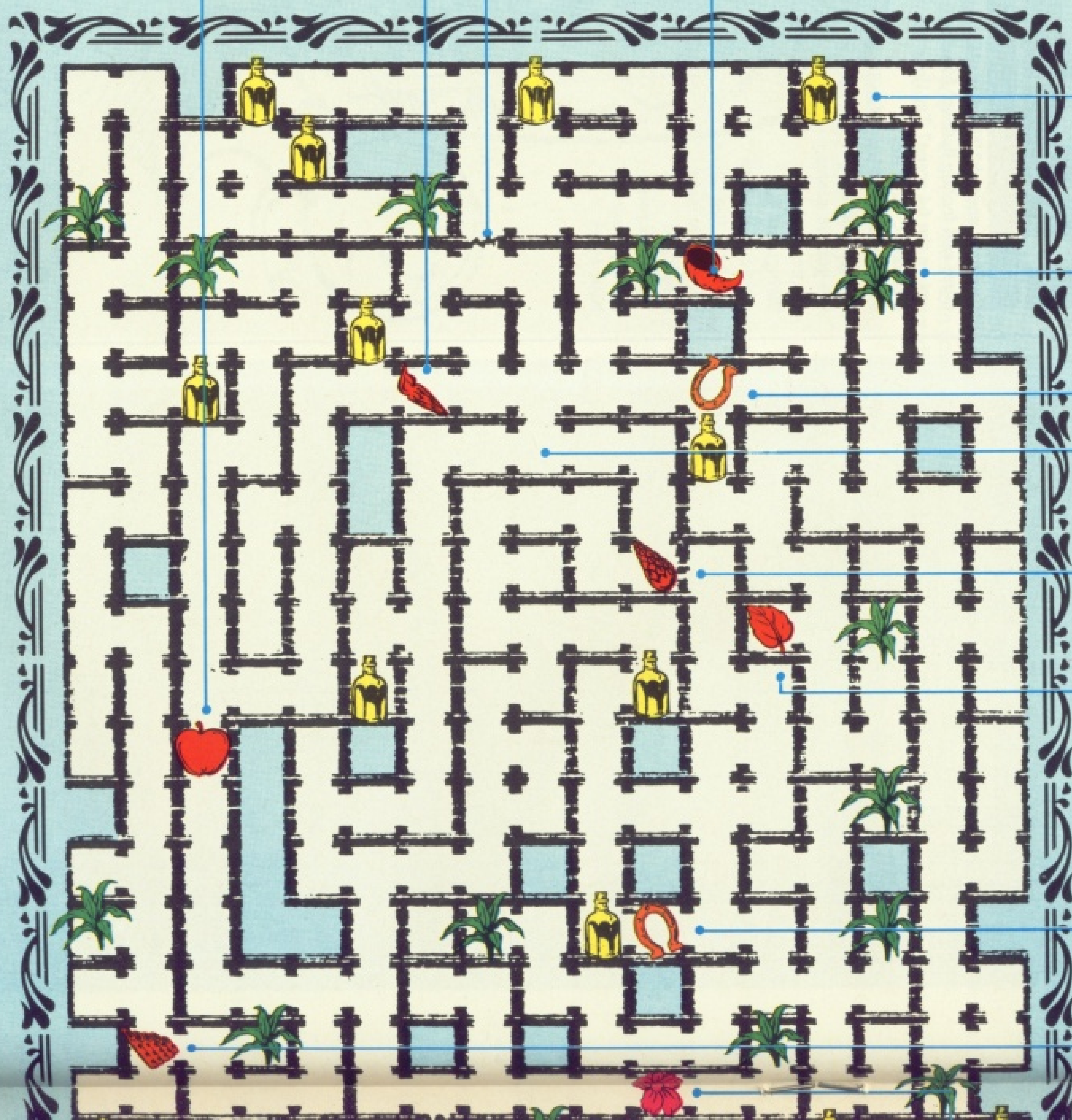
Once upon a time, anyone who launched a game about faeries was in for a lot of stick. It's not easy to believe in faeries and it's even harder to believe in faerie games but Orpheus has done it. Now, we know this isn't going to go down too well with the blood and guts, do or die, joystick butchers of this world. But before you turn off completely (or even turn over), get all the airy faerie jokes out of your system. *Elidon* really is a little bit of magic.

For starters, it's a wonderful world to wander around in. The rooms are beautifully drawn in glorious technicolour. David Bellamy would have no trouble identifying all the rare and exotic flora, although none of them have faerigated leaves. Graphics aside, it's also a tough nut to crack.

Flying the faerie way is a lot harder than yer average flight sim. Movement is really smooth despite the flutter of tiny wings and you'll need to practise hovering and acrobatics. The tiniest slip sends you spinning — often into the unexplored depths of the mysterious forests.

Faerie-features herself ain't just another pair of pretty pins. To get to sit by her faerie queen, she must restore the garland bloom to its glorious state by carrying magic potions to cabbage-like magical plants. While on her scenic forest tour, she can collect the faerious objects lying in her path, such as a torch and pink flowers, which'll help in her tireless pursuit for fame'n fortune. But she must be on her guard for, lurking in the corners of the darkened forest glades, are nefaerious forest spirits, eager to cut short her magic mission.

Elidon is an epic arcade/adventure in the best possible sense of the words. Even with the map, you'll need more than the odd spell to complete the game. And it counts as a pleasant summer rest from the blood and guts of the arcades! But it isn't just a game for 'sensitive'



sible sense of the words. Even with the map, you'll need more than the odd spell to complete the game. And it counts as a pleasant summer rest from the blood and guts of the arcades! But it isn't just a game for 'sensitive' people though the cultured among you *(Now you're kidding! Ed)* will appreciate the subtleties of the Grieg boogie (no — it's not in the charts). Time to get the Brownie out and sit at the bottom of the garden. Who knows what you'll see? At a delicate £8.95, it sounds faerie nuff to us!



force-field and drop them to produce a merry tune as well as open up a whole new world.

Pluck a little flower-power to guard against the nasties. Kills all known bubblers and moths dead.

We christened this spirit a 'bubbler'. Again, it's one to dodge unless you're carrying the flower or leaf — in which case a sharp prod with your wand will make it disappear in a puff of smoke — literally!

Watch where your faerielands ... don't tangle her tootsies in the trees.

Tinkerbell, who sports a flimsy chiffon dress and a delicate ankle chain, is a real floozy. Ain't she cute? (Ugh! Ed).

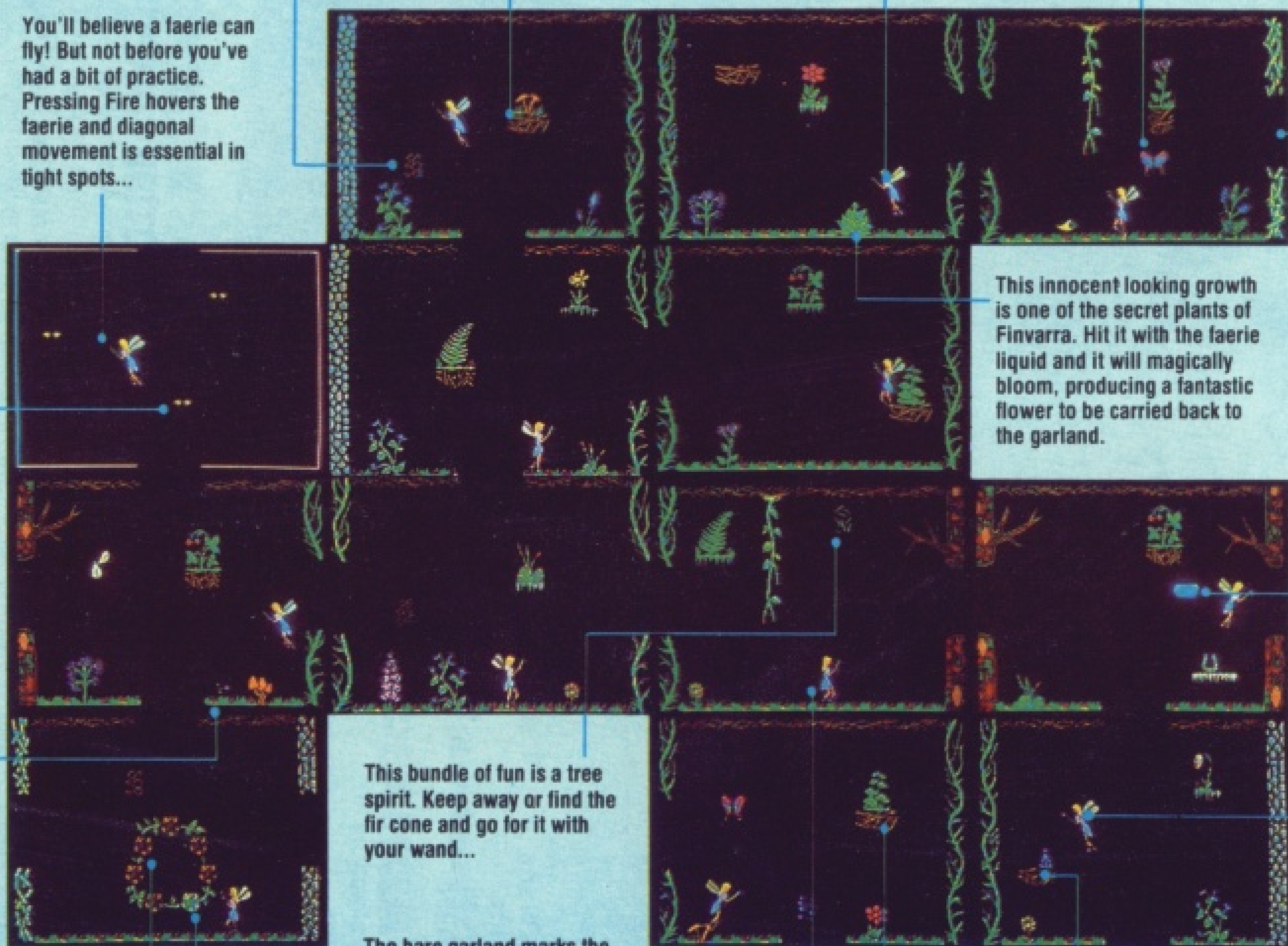
Be warned! The butterfly's beauty is only skin deep. Let it touch you and it feasts on your magic.

You'll believe a faerie can fly! But not before you've had a bit of practice. Pressing Fire hovers the faerie and diagonal movement is essential in tight spots...

Flying on instruments is almost impossible. You can sometimes edge around the black masses that these menacing eyes belong to but a better solution is to pick up the torch

Moths are tree-spirits and, unlike flutterbies, flit gaily from room to room. Rub wings with one and you'll be sent spinning to the forest bed.

Goodbye to the magic dust! Grab some of this to top up your magic. Guaranteed no side-effects!



Mind the gap! Ease through to reach the next room. And steer clear of plants and walls — bump into them and you'll crash to the ground.

This innocent looking growth is one of the secret plants of Finvarra. Hit it with the faerie liquid and it will magically bloom, producing a fantastic flower to be carried back to the garland.

Gyrating blobs (this is a faerie game?) hang out in particular rooms. You can't get rid of them and they drain your magic faster than anything...

Whenever you enter a room from beneath, fly left or right and be ready for an emergency landing. Shoot straight up and who knows what you'll bump into. If you do knock yourself into a spin, you can drop for ages until you land in a heap, many rooms from where you started...

This bundle of fun is a tree spirit. Keep away or find the fir cone and go for it with your wand...

The bare garland marks the start of your quest. Find the potions, apply them to the plants and bring the blooms back here. Each one you retrieve earns an extra pair of wings. Collect all seven to win...

Hey! Once every thousand or so years, a tree spirit will get caught inside the garland. Good place for 'em too!

Ooops — grounded! Twinkle's run out of magic and will be a touch vulnerable until her new wings grow.

You have to be clear of plants and ledges before you can take off...

No, it's not faerie shampoo. This is one of the magic potions to be lovingly poured on a Finvarra plant.

Don't play with fire! You'll get your wings burnt if you go near this little devil.

You start with four sets of wings and will use up a pair everytime you run out of magic. Lose all four and the game's up. There's an extra set when you get a flower back to the garland.

Points aren't that hard to come by — ten points for visiting a room, a hundred for a horseshoe and so on. It's a lot easier than actually completing the game!



The magicometer indicates how much magic you've got left. Top it up with magic dust or you'll be using up a set of wings.

You can carry up to three objects at once — a vicious rule as you'll end up juggling stuff around and leaving bits here and there in order to get all seven flowers.

COMPETITION

BOOTY & THE BEAST!

Want to win a playmate for your 64? Then grab a load of this...



Imagine running your life from the comfort of your armchair! Even if such a Utopian lifestyle seems a bit far fetched, you can make a start by winning a robot arm in this month's compo.

Arm in arm with Commotion, we're handing out a fistful of goodies — a handsome first prize of a Beasty Robot Arm plus, for 20 runners-up, a host of Beasty's robotic friends.

Beasty's not as 'armful as he sounds. In fact, he'll be quite a handy addition to the 64 playroom. He consists of a Beasty Arm mechanism, four servos and a Beasty interface. And he won't even bite back when you totally dismember him and rebuild him to suit your needs for he's made of stronger metal than us mere mortals — aluminium rods, moulded joints, pushrods, screws and a steel base.

And his mates, the Movits? Well, they're a lively lot of pre-programmed robot kits. We're giving away ten Circulars (big Movits) and ten Line Tracers (little Movits).

ARMCHAIR ANTICS

Well — that's what's up for grabs this month. But, as any seasoned reader will know, you've got to get your finger out if you want to win a prize. So, what beastly task have we got tucked up our sleeves this month? Spot the number of arm puns on this page? Design a robot arm? (*Yawn! Ed*) No, all this smacks of too much hard work.

Since all these robots are so fun-filled and flexible we simply want you to tell us just how versatile they can be. Why not save a bit of elbow grease while Beasty muscles in on all those tedious tasks around the home? Our Beasty has already done a touch of typing, is a real hit at table tennis and has an excellent handy-cap at golf. He's shaved the editor (completely!), rolled his fags, made his tea (what a creep!) and still found time to open the post and water the plants.

But, while he's putting our jobs on the line, I'm sure you can think up some far more original and witty uses for Beasty. Enter your most gripping idea on the coupon but make it short and snappy — we don't want a-day-in-the-life-of-a-robot-arm yarn!

HANDY BITS

- Entries should be post-dated no later than 31st August 1985.
- Each entry must include a completed coupon with your idea for using a robot arm clearly written on the back of the envelope.
- Entries will not be accepted from employees of Commotion or Sportscene Specialist Press Ltd., their printers, distributors and families. This restriction also applies to armless robots.
- The Editor's decision is final and his arm can't be twisted by offers of £10 notes, cheap software, etc, etc.

COMMOTION COMPO COUPON!

Fill in this coupon and send it (or a photocopy of it) to Commotion Compo, *Your 64*, 14 Rathbone Place, London W1P 1DE.

You've got to hand it to me — I'm a mega-wit! This is the most original thing I'll do with Beasty if I win him:

Name ....

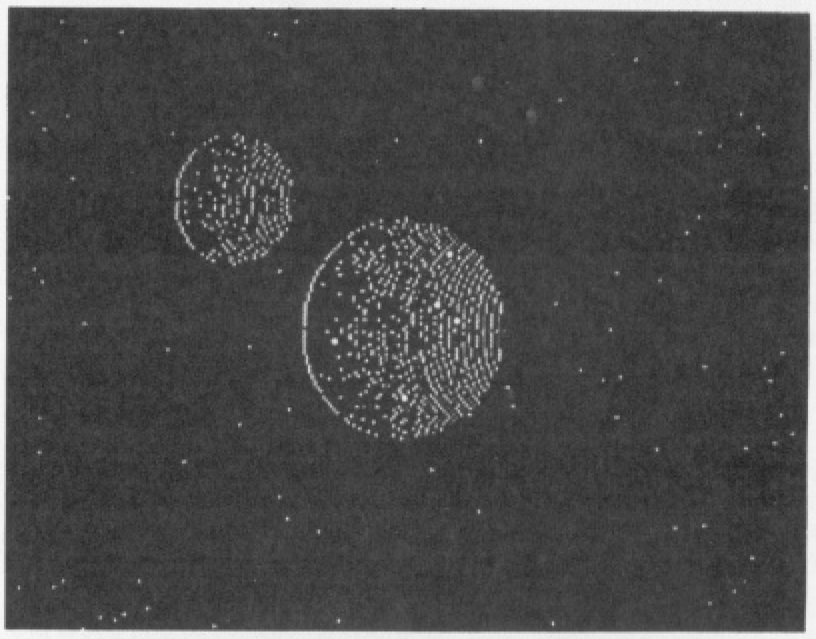
Address ....

.... Postcode ....

SPECIAL OFFER!

FORGET WHAT SIMON SAYS

Basic 2 working you too hard? Why pay fifty quid for a Basic extension? ... Your 64 MegaBasic at your service ...



The little program on the right produced this rather fun screen shot. What's more surprising is that it is a Basic program on the 64. The trick is* Y64 *MegaBasic, a touch of machine coded magic that transforms the way you program your computer. MegaBasic adds 30 new commands — from graphics via programming aids such as RENUMBER and OLD to useful utilities such as BACKUP and DIR. And it does it for a lot less than some Basic enhancers we could mention.

Soon, you will be able to buy MegaBasic-the-book in the shops for £4.99. But if you order it direct now it will cost you a mere £3.99. If the thought of ruining that manicure typing it in scares you, you can go one better and order the book and the cassette together for £7.95 and save £2 over shop prices.

Why treat your 64 with kid gloves? Show it who is boss! Supercharge it with* Y64 *MegaBasic now!

```
10 REM PLANETS
11 REM Y64 MEGABASIC/MAY 85
30 DEFFNA(X)=INT(RND(1)*X)
40 HIRES
50 BCOL 0:GCOL 1
60 CLG
70 FOR Z=1 TO 100
80 SET FNA(320),FNA(200)
90 NEXT Z
100 FOR P=0 TO 1
110 XC=160-60*P:YC=100-40*P:S=35-15*P
120 FOR K=-S TO S
130 X=SQR(S*S-K*K):X2=2*X
140 SET XC-X-1,YC-K
150 FOR L=-X TO X STEP 2.5
160 IF FNA(X2)-X>=L THEN:RESET XC+L,YC-K
:GOTO 180
170 SET XC+L,YC-K
180 NEXT L,K,P
190 GOTO 190
```

- **Switch to Hi-res graphics.** (line 40)
- **Set the back-ground and foreground colours.** (line 50)
- **Set the border to black and clear the graphics screen.** (line 60)
- **Plot a random star.** (line 80)
- **Plot planet.** (line 140)
- **Turn points on or off for shading effect.** (lines 160, 170)

30 NEW COMMANDS

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CUT and RUN!

When Basic bores you, inject a little action with a compiler. Andy Bennett *races the top four and picks the one for the speed freaks . . .*

Ever spent weeks writing a monster Basic program only to discover the end result crawls along like a comatose caterpiller? Then you spend another day cutting corners . . . you shorten variable names, move subroutines to low line numbers and so on. And the thing is still paralytic.

The correct procedure in this emergency is one, panic, two, crawl into a corner and cry and three, rewrite the most used and slowest bits of the program in machine code. Ideal if you just happen to be a dab-hand at 64 code and the spare time to do it. The lazy alternative is to buy yourself a compiler to translate the whole program effortlessly into machine code for you.

Instead of decoding each instruction as it goes along, a compiler translates a whole program into machine code once and for all before you run it. This produces programs that not only run faster but feel more 'professional' than a plain ordinary Basic program.

But if compilers are so magic why does anyone bother to learn machine code at all? A compiled Basic program will never be as good as a program written in machine code from scratch. A compiler has to stick with the framework laid down by your Basic program — a well-written machine code program is designed in a completely different way. Good compilers are also very large and complex — those that fit in the 64 are much simplified and a bit inefficient. So a compiled Basic program is only four or five times faster than a normal Basic program whereas hand-crafted machine code can be a hundred times faster. Even so, the speed injection is enough to liven up most programs and you can use it to revitalise all your old games and utilities.

Using a compiler is really easy. You load and run the compiler, tell it the name of the program you want to convert and sit back while it does its stuff. When it's finished, you've got a program that you can run off tape or disk completely independently of the compiler.

SPEED TRIALS

The compilers were tested on three short Basic programs and the figures to watch are firstly, the time taken to compile a program and, more importantly, the time taken for the compiled program to run. The first program fills the screen with 'A's, the second writes a disk file with 100 numbers and reads it back, finally the third program sorts 50 random numbers. Some of the compilers are more effective if you rewrite your programs in a certain way such as using only integer variables. Our test used unmodified programs to give a fairer comparison between the compilers.

It's probably no coincidence that the compiler which spends most time compiling is the one that produces the fastest programs — Commodore's *Petspeed.* After all — it spends the most time thinking about what it's doing. The long compile-time doesn't matter — you're only going to compile the program once and run it lots of times.

Petspeed has been knocking around for years — it started life on Commodore's first micro — the PET. It has a strong reputation as an eccentric — I've heard of it refusing to compile a program one day and being quite happy with it the next. (*Do what? Ed*). Commodore has recently switched from *Petspeed* to DTL's *Jetpack* although you'll probably be able to find *Petspeed* in some shops. *Jetpack* is a complete opposite — it's the fastest to compile and produces the slowest programs. Yuk!

Probably the best all-rounder in terms of value, compile-speed and run-speed is Supersoft's *Blitz.* At £50, a compiler isn't cheap, but it does give you an alternative to learning machine code or some other language. Next time nothing happens when you've finished a program, take your compiler and run! 6 4

AND THEY'RE OFF!

Time in secs

	64 Basic	DTL Jetpack	SUPER-SOFT Blitz	CBM Speed	FIRST Basic 64
Program 1 Run	9.4	4.8	3.2	2.4	4.3
Compile		45.1	88	290	100
Program 2 Run	25.8	23	19.8	19.3	22.8
Compile		53	97	320	116
Program 3 Run	47.4	18.7	12	5.3	16.3
Compile		45	92	299	106
Manual		8/10	7/10	7/10	8/10
Price		£39.95	£50	£50	£34.99
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BE A SPORT!

Grab a piece of the action as Steve Malone *swaps his racket for a joystick to take on a crop of sports games.*

TENNIS

International Tennis
Commodore/£5.95

This is far and away the better of the two tennis simulations. First off, you get to see the court lengthways. And, although the players look as if somebody has sat on them, the game looks more professional. It lacks the surface and player options, but you can choose your playing colours and skill level.

You can see the whole court in this one. The viewing area is angled to keep perspective problems to a minimum.

Nice touch here. The crowds eyes move and they applaud after a winning point.



These misshapen creatures are the tennis stars. But they're a much nicer bunch here. If one of the shots is called out, you can appeal to the crowd and gesticulate — just like the real thing.

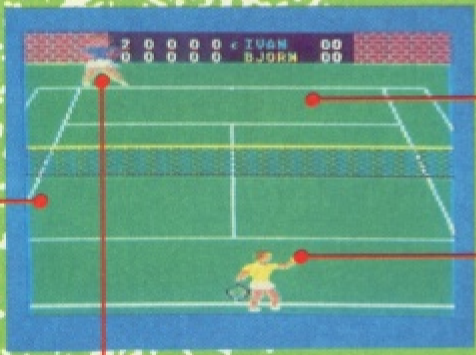
Time flies when you're having fun — so speed up your reactions. Like *On-Court Tennis*, shots are chosen by waggling the joystick, but you must press Fire. If not, you'll simply move around the court.

On-Court Tennis
Activision/£10.99

Once again, the perennial problem of trying to judge a 3D image in a 2D screen as you look down the court towards the scoreboard. There's a choice of surfaces — fast on grass, slow on hard and bouncy on clay. And your opponents sound very ominous — John, Jimmy, Ivan or Bjorn.

Note the shrunken area at the far end of the court plus the clipped corners at the near end — tut, tut!

The player's view down the court doesn't alter as the match progresses. Thus, while behind him, you can judge the game quite well but when your man is on the far horizon play gets tough.



The computer will shift your player towards an oncoming ball, but you choose when to play the shot. Select type of shot by waggling the joystick while pressing the fire button to add subtleties like hard serve or drop shot.

It's easier to judge a shot if you watch the ball's shadow as it travels down the court. Trouble is, until you get the hang of the game, you spend all your time watching the shadow and miss the ball.

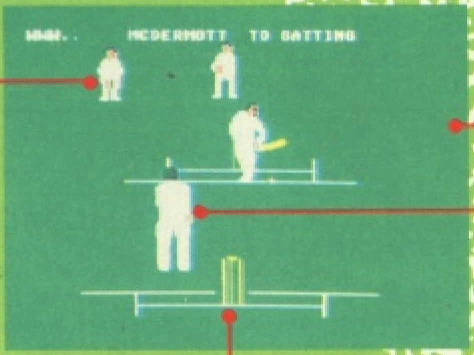
CRICKET

Graham Gooch's Cricket
Audiogenic/£9.95

This may be England's only chance to win the Ashes as a team of players from England and Australia battle it out on the computer screen. You can play the game in either simulation or arcade mode. Despite some odd things occuring with the fielders, this is a more professional game and more fun to watch.

No hard graft here — fielding's automatic but the fielders seem somewhat out of sorts with the ball. For example, on one occasion, six balls from one shot rolled consecutively to the fielder.

The ball zooms around nicely and even appears to jump out of the screen at times.



In simulation mode you choose whether to bowl to the right or the left of the stumps. In arcade mode, wiggling the joystick à la *Summer Games* increases running speed and hence speed of delivery.

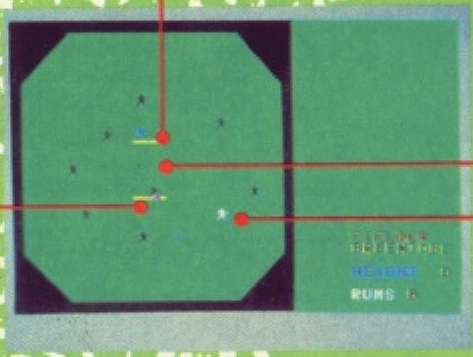
In simulation mode, you merely select whether the batsman will play aggressively, defensively or normally and hope for the best. In arcade mode, you decide when to play the shot. A good shot brings a glow of satisfaction, while slicing the air causes embarassment.

Tim Love's Cricket
Peaksoft/£8.95

***Tim Love's Cricket* (well he would, wouldn't he?) involves two 60 over innings between two teams which have a maximum of 50 batting skill points between them and 30 bowling points but no one player can top nine skill points. Despite the hideous graphics, I liked the game — even though I lost ignominiously every time.**

You can raise or lower the bat by pushing or pulling on the joystick with the fire button held down.

Once the bowler chucks the ball, twiddling the joystick moves the batsman. Rather than stay in the crease, you should walk halfway down the wicket to make your shot.



You choose the bowler and decide whether he shifts to the right or left of the wicket. Make up your mind early in the run — colliding with the umpire doesn't boost your chances of winning!

Once the opposing batsman has clobbered your well judged delivery towards the boundary, each player flashes in turn so you can choose who's going to retrieve the ball.

LIZ HEANEY

Who needs Wimbledon, the Ashes or The British Open when any real sporting event this summer will be battled out on 64 screens?

Why are sports sims having such a ball? Have the software moguls gone batty? Well, if you shoot 'em up groupies think this sudden splurge of green-on-the-screen just ain't cricket, look at our top ten chart — three sports simulations plus a couple bubbling under. This urge to add muscle to flagging computers is as old as the Jimmy Hills! Ever sing *Pong!* first brought the thrills and spills of table tennis into our homes, every major sporting event or sporting hero seems to have been immortalised on computer tape — Daley Thompson, Steve Davis, Graham Gooch, Jackie Charlton (that well known fisherman ...), to name but a few.

Since reviews of every 64 sports simulation would be over ambitious we've dug out four new sporting simulations and played them off against an older rival — apart from tennis where there were two new games vying for attention. Those of you who might be tempted to go off and play the real thing don't know what you're missing.

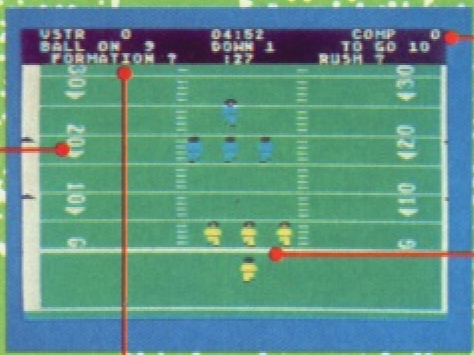
AMERICAN FOOTBALL

On-Field Football
Activision/£10.99

Here's a craze that's hotting up in the UK. It looks like some kind of organised mayhem where getting the ball down the opposite end of the field seems incidental. The four players on each side must score 'touchdowns' — either by passing the ball to one of your men who runs like fury for the line or by getting their retaliation in first!

You only see a section of the pitch. But, Gridiron pitches are marked down the side in yards so you won't get completely lost.

Watch this board — it shows your score, how much time you've got left and yardage.



Choose your formation — there are a number of options plus pass patterns and running plays. I worked best with 'slot left' and 'wide receiver' play though God knows why!

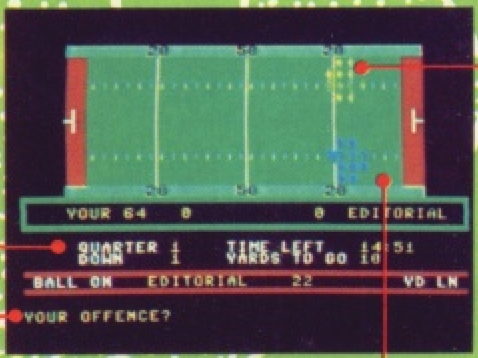
At the start of play, your men are in a cross or 'huddle', as footie fans like to call it. Then, depending on your chosen formation, your team takes up its positions while the opposition gets set for fighting back.

American Football
Argus Press Software/£9.99

This is a very different beast to *On-Field Football*. It's not of the twiddle-your-joystick-to-choose-your-move genre like most other sports games, but a strategy game in which you choose your attack or defence strategy to try and out guess what your opponent is going to do.

The scoreboard gives such useful info as yardage gained, time remaining and, of course, the scores.

OK team — it's eleven players a side. The characters look quite nice but don't do a lot. A break down the field to the other end looks more like a gentle stroll!



Two lettered codes are entered to select your attack or defence. These don't actually appear on the screen cos, in a two player game, you obviously don't want your opponent to peep at your option.

The field doesn't attempt to be realistic — it's more a diagrammatic version of the pitch. But you do get to see the whole field. Not that this matters since you can't influence events on the field once you've entered your tactics.

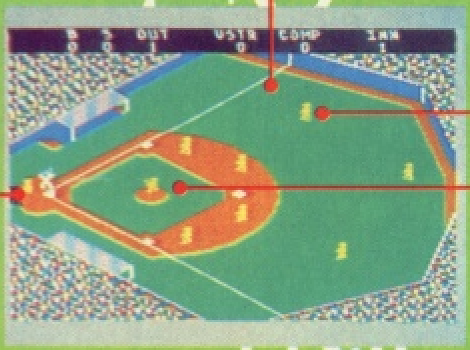
BASEBALL

Star League Baseball
Activision/£10.99

While *World Series* looks prettier, this one's more fun. The viewing angle's from the side rather than from behind the batsman. And, although the players are a bit smaller than their Imagine counterparts and this game lacks the big video screen to aid the batsman (which was very distracting), it's easier to play.

The side-on view of the field makes judging the position of a ball in the outfield much easier in this one than in World Series.

Not only are all the players in boring monochrome but also, when the fielder gets the ball, he turns black.



It's tough at the top — three strikes and you're out! But, despite the non-existent video screen, the ball's much easier to hit. And be careful not to hoist the ball left or right of the crowd — it's a foul shot if you do!

It's hero time! You can copy the pitching styles of such baseball illumini as 'Heat' Muldoon or 'Knuckles' Flanagan (sound like nice boys!). 'Knuckles' is very lively but 'Heat' is more effective.

World Series Baseball
Imagine/£6.95

Here you're looking over the batsman's shoulders which could be awkward since it's hard to judge when to make your swipe at the ball. But the programmers have got it all sussed out — they've provided a large 'video' screen so you can time your shots to perfection — in theory anyway!

Watch the video screen and not the field when you're batting, else you'll miss the ball! The screen also shows the ref's decision.

The pitcher has a number of throws up his sleeve. These are selected by the joystick but some are illegal so take care.



Best to ignore the batsman when he's trying to wack the ball — but watch him closely as he hurtles around the bases. You can sneak up extra runs when the fielders aren't looking so remember where your men are.

Fielding's tricky. Straight catches don't come easy and when the ball hits the ground, it's hard to find it. Best to watch the shadows and follow it in flight.

It seems that every software house in the country wants a slice of the action with all manner of sports from angling to boxing blasting onto 64 screens. The new ones to watch out for include Elite's *Frank Bruno's Boxing*, Imagine's *Hyper Sports* and *Daley Thompson's Supertest*, the follow-up to the game which made joysticks quiver in their bases! So, if your fave way to shed a bit of sweat isn't covered in our reviews, then check out the nearly-rans in our table.



LEAGUE TABLE

Game	Price	Company
Knockout	£9.95	Alligata
Frank Bruno's Boxing	£7.95	Elite
Jackie Charlton's Match Fishing	£6.95	Alligata
Matchpoint	£7.95	Psion
Cricket 64	£7.95	CRL
Jonah Barrington's Squash	£7.95	New Generation
International Basketball	£5.99	Commodore
One On One	£9.95/£12.95	Ariolasoft
The Boss	£8.95	Peaksoft
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World Cup	£6.95	Artic
Football Manager	£7.95	Addictive
Five Aside Football	£6.95	Anirog
Summer Games	£14.95/£19.95	US Gold
Summer Games II	£9.95	US Gold
Winter Games	£9.95	US Gold
Hyper Sports	£8.95	Imagine
Daley Thompson's Decathlon	£7.95	Ocean
Daley Thompson's Supertest	£7.95	Ocean
Decathlon	£9.99	Activision
Brian Jack's Superstar Challenge	£8.95	Martech
Eddie Kidd's Jump Challenge	£7.95	Martech
Kick Start	£1.99	Mastertronic
Pitstop	£8.95	CBS/Epyx
Pitstop II	£10.95	CBS/Epyx
Pole Position	£9.95	US Gold
Talladega	£9.95	US Gold
Slapshot	£8.95	Anirog

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- Legend's *Valhalla*.
- 50 on-screen colours!

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- Pilot, Forth, Comal and Pascal.
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- Five graphics art packages.
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- Commodore's *Music Maker*.
- Activision's *Ghostbusters* — the game!
- Commodore's C-16 versus the Plus/4.
- Routines for adventure writers.

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- Llamasoft's Jeff Minter speaks out!

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- *Elite* — the final frontier?
- Protect your Basic listings
- *The Scribe* — part II.

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Scratchpad

Three useful chunks of machine code in our regular readers' routine spot.

A short and simple start from Stephen Elmer of Ipswich. His short routine produces a striped border while waiting for a key to be pressed. Stephen's idea is that you can use the routine whenever your program produces a pause such as "Press any key to continue".

James Cook from Windsor has submitted a routine to make reading the joystick easy. It's a machine code routine that uses interrupts to keep a set of X and Y co-ordinates constantly updated. This means that the X and Y co-ordinates are kept ready no matter what else your Basic program is doing and therefore makes animation smoother.

Finally, Roger Peachey who's based in Bedford has come up with a very complete machine code program to dump hi-res screens to an MPS801 printer. Not only does his program work quickly but it is simple to use because Roger calls on routines in the 64's ROM to make the dump into a normal Basic command.

And don't forget — if you've got any useful routines send them to Scratchpad, 14 Rathbone Place, London W1P 1DE. Besides the fame and prestige, we'll also pay for any routines we use!

WAIT FOR IT!

Stephen Elmer

This short machine code subroutine produces a multicoloured border while it waits for a key to be hit. It can be used whenever a "Press any key to continue" pause is needed. Call the routine with SYS 49152. If you do this from the keyboard, you'll need to take your finger off Return pretty sharpish to see the effect. When you press a key, the routine returns without restoring the border to the colour it was so you may need to reset it.

```
10 FOR I=49152 TO 49152+19:READ A:POKE I
,A:NEXT I
20 DATA 162,0,142,32,208,142,32,208,232,
224,15,240,243,165,197,201,64,240,239,96
```

The Basic loader for the border flashing routine.

SMOOTH JOYSTICK

James Cook

This machine code routine lets you use a joystick to control a sprite simply and smoothly. It works by setting up a regular interrupt so that the joystick reading code is executed roughly sixty times a second. The code keeps two locations (49152 and 49153) updated with X and Y co-ordinates.

The Basic program consists of a machine code loader (the subroutine at line 1000) and a simple demonstration that lets you move a square sprite round the screen under joystick control. Once loaded, the code is activated with SYS 49183. If you break out of the program without turning the code off, you'll need to SYS 49193 or press Run/stop and Restore to tidy up.

```
10 REM M/C JOYSTICK CONTROLLER
20 REM JOYSTICK IN PORT 2
25 GOSUB 1000:REM LOAD M/C
30 FOR I=12288 TO 12350:POKE I,255:NEXT
I
40 POKE 2040,192:V=53248:POKE V+39,7:POK
E V+21,1
45 POKE 49152,100:POKE 49153,100
50 SYS 49183: REM JOYSTICK READER ON
60 POKE V,PEEK(49152):POKE V+1,PEEK(4915
3)
70 GET A$:IF A$="" THEN 60
80 SYS 49193: REM JOYSTICK READER OFF
90 END
1000 FOR I=49156 TO 49244:READ A:POKE I,
A:CC=CC+A:NEXT
1010 READ CS: IF CS<>CC THEN PRINT "CHEC
KSUM ERROR":STOP
1020 DATA 120,173,2,192,174,20,3,141,20
1030 DATA 3,142,2,192,173,3,192,174,21,3
1040 DATA 141,21,3,142,3,192,88,96,169
1050 DATA 45,141,2,192,169,192,141,3,192
1060 DATA 32,4,192,96,173,0,220,174,0
1070 DATA 192,172,1,192,74,176,5,192,0
1080 DATA 240,1,136,74,176,4,200,208,1
1090 DATA 136,74,176,5,224,0,240,1,202
1100 DATA 74,176,4,232,208,1,202,142,0
1110 DATA 192,140,1,192,108,2,192
1120 DATA 9541: REM CHECKSUM
1130 RETURN
```

An easy way to put your sprites under joystick control.

DUMP FOR JOY

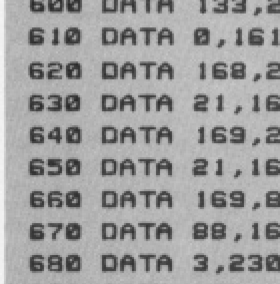
Roger Peachey

In issues 8 and 10, Mr Souton and Mr Carrol asked about dumping high-resolution graphics screens to an MPS801 (Vic 1525) printer. This machine code utility will dump screens in two sizes. You can also tell the program where in memory the screen you want to dump is by specifying 8192, 24576, 40960 or 57344 as the starting address.

The program is given as a Basic loader. After running it, the dump routine will be available until you switch off or load some other machine code over it. To call the program, use SYS52224, *screen, size* where *screen* is 1,2,3 or 4 for a start address of 8192, 24576, 40960 or 57344 respectively and *size* is 1 for a small dump and 2 for the family size.

```
10 REM MPS801 HIRES DUMP
15 I=52224:T=0:PRINT"█████████████"
20 PRINT TAB(14);"PLEASE WAIT"
30 READ A: IF A=-1 THEN 50
40 POKE I,A:T=T+A:I=I+1:GOTO 30
50 IF T<>64504 THEN PRINT"DATA ERROR":ST
OP
60 PRINT"██";TAB(8);" USE SYS52224,SCREE
N,SIZE"
70 PRINT"█ SCREEN=1 =>8192  : SCREEN=2 =
>24576"
80 PRINT"█ SCREEN=3 =>40960 : SCREEN=4 =
>57344"
90 PRINT"█   SIZE=1 =>SMALL :   SIZE=2 =
>LARGE"
120 DATA 32,253,174,32,158,183,134
130 DATA 93,138,240,8,201,4,240
140 DATA 7,41,252,240,3,76,72
150 DATA 178,169,4.56.229,93,170
```

```
160 DATA 240,8,169,225,56,233,64
170 DATA 202,208,250,133,252,133,254
180 DATA 169,56,133,251,133,253,32
190 DATA 253,174,32,158,183,134,151
200 DATA 138,240,8,201,3,240,4
210 DATA 41,252,240,3,76,72,178
220 DATA 169,253,133,20,169,205,133
230 DATA 21,169,8,133,87,169,1
240 DATA 133,88,169,0,133,91,133
250 DATA 92,32,174,255,169,4,32
260 DATA 177,255,169,96,32,147,255
270 DATA 169,8,32,168,255,169,13
280 DATA 38,168,255,160,0,162,0
290 DATA 120,169,52,133,1,177,253
300 DATA 162,0,74,232,228,87,208
310 DATA 250,9,128,133,89,162,1
320 DATA 177,251,228,88,240,5,10
330 DATA 232,76,142,204,133,90,169
340 DATA 55,133,1,169,45,197,92
350 DATA 208,4,169,0,133,90,163
360 DATA 151,201,1,208,7,165,89
370 DATA 5,90,76,15,205,162,0
380 DATA 169,0,133,93,133,94,165
390 DATA 89,5,90,10,10,176,7
400 DATA 38,93,38,93,76,208,204
410 DATA 38,93,56,38,93,232,224
420 DATA 3,208,236,162,0,10,176
430 DATA 7,38,93,38,94,76,230
440 DATA 204,38,93,56,38,94,10
450 DATA 176,7,38,94,38,94,76
460 DATA 245,204,38,94,56,38,94
470 DATA 232,224,3,208,236,162,0
480 DATA 169,128,5,93,129,20,230
490 DATA 20,208,2,230,21,169,128
500 DATA 5,94,32,168,255,32,168
510 DATA 255,200,192,8,240,3,76
520 DATA 119,204,169,24,197,91,240
530 DATA 35,230,254,24,165,253,105
540 DATA 64,144,3,230,254,24,133
550 DATA 253,230,252,24,165,251,105
560 DATA 64,144,3,230,252,24,133
570 DATA 251,160,0,230,91,76,119
580 DATA 204,165,151,201,1,240,43
590 DATA 169,13,32,168,255,169,253
600 DATA 133,20,169,205,133,21,162
610 DATA 0,161,20,32,168,255,32
620 DATA 168,255,230,20,208,2,230
630 DATA 21,165,20,201,197,208,234
640 DATA 169,253,133,20,169,205,133
650 DATA 21,165,88,201,8,208,35
660 DATA 169,8,133,87,169,1,133
670 DATA 88,165,253,24,105,8,144
680 DATA 3,230,254,24,133,253,165
690 DATA 251,24,105,8,144,3,230
700 DATA 252,24,133,251,76,161,205
710 DATA 198,87,230,88,169,0,133
720 DATA 91,230,92,169,46,197,92
730 DATA 240,61,169,1,197,92,208
740 DATA 7,24,165,253,105,8,133
750 DATA 253,165,254,56,233,31,133
760 DATA 254,24,165,253,105,248,144
770 DATA 3,230,254,24,133,253,165
730 DATA 252,56,233,31,133,252,24
790 DATA 165,251,105,248,144,3,230
800 DATA 252,24,133,251,169,13,32
810 DATA 168,255,160,0,76,119,204
820 DATA 169,55,133,1,169,13,32
830 DATA 168,255,169,15,32,168,255
840 DATA 32,174,255,88,96,-1
```



Roger Peachey's impressive MPS801 hi-res dump program.

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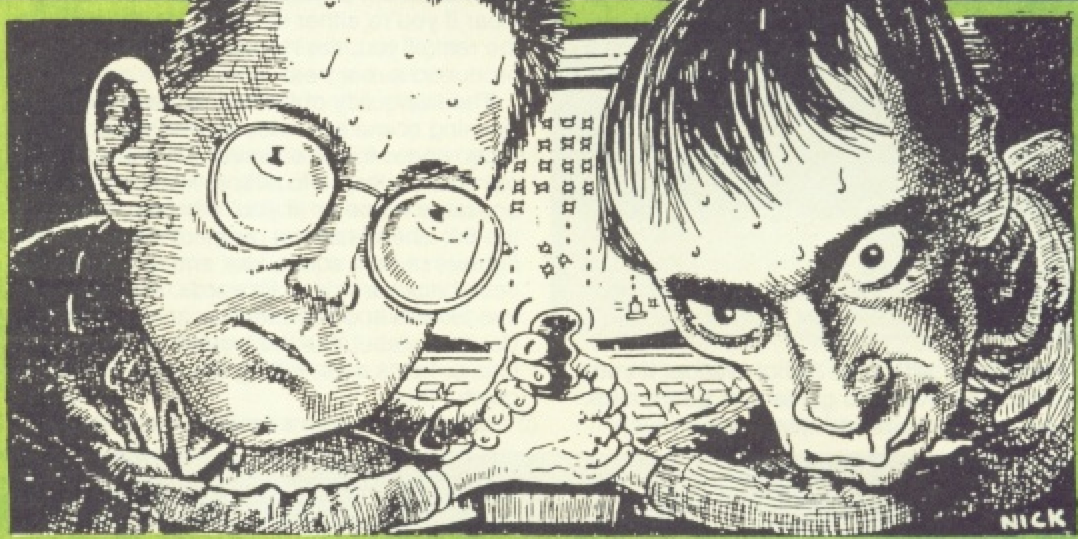
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ACTION REPLAY

No. of players · Joystick · Joystick optional · Cassette · Disk

Yikes! Psycho Malone *and his sidekick* Pete Connor *stalk the summer countryside for fresh games to review . . .*



Ah Summertime! Time to mothball your 64 and soak up some of that glorious sunshine (please!). Unless, of course, you're an overworked and underpaid Action Replay reviewer chained to your joystick day and night (Whatever happened to job satisfaction? Ed).

For those of you locked away from those long golden days, there's still plenty of tapes for you to plug away at, though some do seem to be suffering a little from the heat — we've had a lot of clones and a lot of drones pass our way this month.

So what failed to dribble past our selection committee this time? Well, first off the stack is **Chopper*****, a sparkler tape that will fizzle out shortly. "Not another helicopter game?", I hear you say. 'Fraid so. But whereas most copter games are at least imaginative, this one is, horror of horrors, another*** **Defender** ***clone. Very pretty perhaps but*** **Defender** ***nonetheless. Your chopper flies over the landscape blasting away at hordes of rival helicopters (beats aliens any day . . . nah, maybe it doesn't). You've got to battle with an unresponsive fire button until the computer throws you a bonus and a chance of mid-air refuelling. All-in-all, the sort of game to tone the reflexes after a lay-off but not one to tax your joystick.***

Sticking with the cheapies, those prolific boys at Firebird's Silver label have yet more titles for your perusal. The first is **Estra*****, a frustrating little game where you must collect the pieces of a statue while avoiding everything in sight. Definitely one for a steady hand and intense concentration. Not my cup of tea at all! Neither is*** **Circus Circus*****, one of those platform games where the level of difficulty tries to compensate for the lousy game content. For fans of the fiendish only (And you don't like it? Ed). Never mind, it's time to sit back and relax, pour yourself a long cool drink and sample all that's loadable this month. Are you sitting comfortably? Then we'll begin . . .***

EVERYONE'S A WALLY
Mikro-Gen/£9.95 cassette

For weeks the *Your 64* office has been swamped with posters and other paraphenalia — T-shirts, mugs, caps — to promote this game.

But, if Confucious he say the quality of game is inversely proportional to the hype, he's wrong. *Wally* is a very good game.

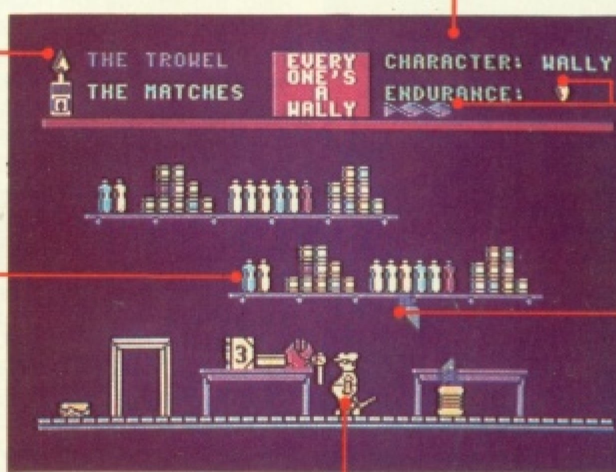
The idea is that Wally and his motley band of four assistants have a number of jobs to perform around the town, like mending the fountain and fixing a fuse. Each character is a specialist in his own field. For example, Tom is a mechanic and Dick is a plumber. I say 'his' since although Wilma (Wally's wife) is part of the team, she only does the shopping. (*How sexist! — Ed*).

But it's not as simple as it seems. Firstly, Wally has to find the right person for the job which means wandering around the town until he happens to bump into them.

And, if you're really smart, you'll draw up a map of the town while on your travels. Strangely enough, I found all roads led to the Red Lion Pub!

And to avoid being hauled over the coals by trade union officials, Wally must pay Tom, Dick and Harry for the work they do. The money's kept in a safe — and, wouldn't you know it? The numbers which make up the combination of the safe are scattered around the town and have to be collected. Even then, some of the numbers won't appear until yet more tasks are performed. Definitely a terminal case of all work and no play!

Already a hit amongst the lowly Speccy owning classes, *Wally* should win the joysticks of 64 owners too.



These are the objects Wally's carrying at the moment. Being a builder, the trowel is obviously important — but the matches? Maybe Wally's an undercover arsonist! But, as always in these games, the characters can only carry a limited number of objects at one time.

Here's the member of Wally's motley crew who you're controlling at the moment.

Endurance is measured by two factors. The heart represents strength and the bit of string underneath is Wally's tether — what he must not come to the end of!

This screen shows the garage, one of the many locations where useful nick nacks can be collected to help complete a good day's work.

Here's what Wally's been looking at — the oil can which he can give to Tom the Mechanic (when he finds him).

Beware the nasties! Running Wally into one of them reduces his tether.

THE WAY OF THE EXPLODING FIST

Melbourne House/£9.95 cassette



Pete Kick! Hit! Slap! Bang! Wallop! If you thought the Kung-fu game was dead, think again. Here's a hard-hitting game which requires much dedication, will-power and exercise, both physical and spiritual. So stay clear if you're either lazy or faint of heart. For the rest of you, the House of Melbourne has produced a real treat . . .

The tranquility of the willow-patterned opening scene subsides as our two contestants, under the direction of the inscrutable old master, leap into action. You can play against a friend or (if you're brave) against the 64. There's a vast range of moves — the fighters punch, squat, kick and even somersault backwards and forwards. Each strenuous blow is accompanied by an ear-piercing Dalek-like shout as the weaker player crumbles or keels over, hitting the floor with a painful thud.

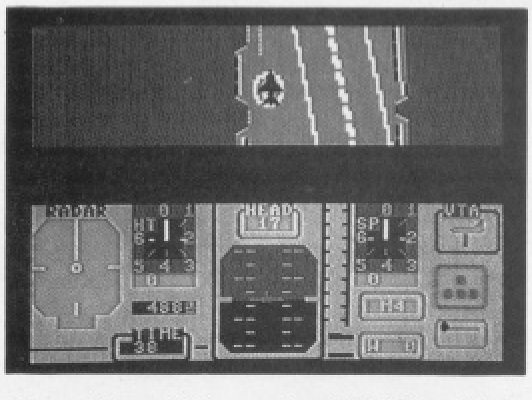
Making your own attacks is easy enough but it's awkward remembering which way to push the joystick to escape unscathed before a foot lands in your guts or a fist in your face.

It's tough and addictive and the graphics and sound are superior to any game in its league. In short, a *Bruce Lee* of computer games!

Steve Since I'm no great fan of martial arts games, this little offering from Melbourne House came as quite a surprise in that it's noticeably superior to its competitors. The range of moves is very impressive, especially the ability to somersault over your opponent, a feature I've not come across before. But it's not easy — the computer plays a mean game with yours truly succumbing to many a well-placed foot in the groin!

JUMP JET

Anirog/£9.95 cassette £14.95 disk



Steve Wowee! Yet another Flight Simulator! At least there's not a chopper blade in sight. What's more, it has no connection with any epic film that the BBC wheels out every other Sunday and neither is it produced by US Gold. I mean, for a flight sim, we're talking about original. Not that it is very different...

There are basically two types of simulator the ones which simulate every last nook and cranny of the aircraft and those which are really games under the guise of flight simulators. *Jump Jet* falls into the latter category.

It starts with a bird's eye view of an aircraft carrier which is somewhat reminiscent of *Raid on Bungeling Bay*. By adjusting the flaps and direction of the thrust you should hopefully get in the air. That's the easy part. The trick is to then skilfully manoeuvre the jet while avoiding the beckoning brine. If all goes well, scene two shows the view from the cockpit.

Now the fun starts as you zoom around shooting at enemy aircraft and doing lots of other fun things peculiar to these games. And, if you successfully complete a mission (get back in one piece without gaining more than the set number of penalty points) you get promoted to the next grade.

Should appeal to both fans of real flight simulators and arcade shoot'em ups.

Pete A novel variation on the flight simulator theme. And just when I thought there weren't any left. Take-off's easy but buzzing around and locating the enemy requires more skill. The speech was good, even if all I seemed to hear was 'Mayday, mayday, I'm bailing out!'

ALMAZZ

The Edge/£9.95 cassette £12.95 disk



Steve As memories of the last Indiana Jones pic fade, so the quantity of lone-explorer-in-search-of-treasure games has fallen. Just when you thought it was safe to go back into the jungle, here comes an explorer arcade/adventure from The Edge.

As you enter the world of *Almazz* in search of a fabulous diamond, and armed only with six bullets and a full water bottle, you get the distinct impression that this is going to take some time. The 'scoring' is related to the number of 'days' you spend wandering around — since an hour takes 51 seconds real-time, you can appreciate the problem. Also, the natives are restless and the lions hungry. Running away helps but that makes you hot which then requires plentiful swigs from the water bottle to keep you cool.

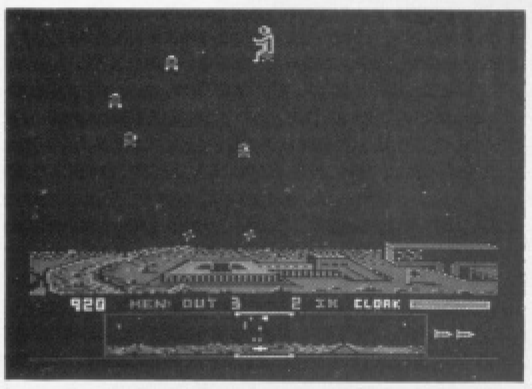
Eventually, you'll have to fend off unwelcome advances with your six gun but you'll soon run short of bullets. Fortunately, some of the native huts have bullets hidden away inside, and there are also springs to replace your water.

It's just as well — after a couple of 'hours' or so, I began to think that the heat was getting to me — surely I'd been to this spot before? No, it's simply that much of the map is strikingly similar. What's more, some of the sprites and raster interrupts are distinctly iffy. A hard slog.

Pete The diamond of Almazz still eludes me and I couldn't care less. The only thing I enjoyed about this game was the funky afro backing music. But that couldn't compensate for the slow movement and boring graphics. Were those shaggy creatures lions or Dulux old english sheepdogs?

DROPZONE

US Gold/£9.95 cassette £14.95 Disk



Pete Help! US Gold is regressing at a rate of knots. This is a goodish variation on a tried and trusted theme but it's still a cross-bred clone — nine parts *Defender* to one part *Jet Pac (Zzzzz . . . Ed)*. The ship's been replaced by a chap wearing a back-pack who has, some really whizzo bombs — the sort that destroy all forms of life except yourself!

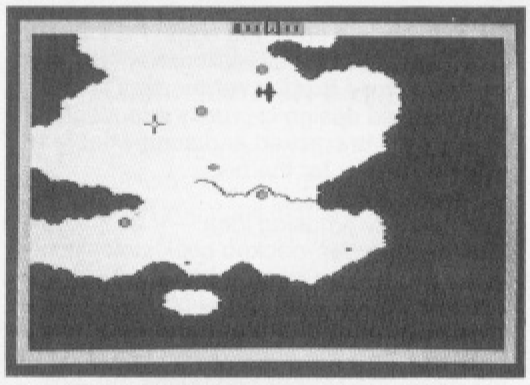
This guy's a real hero — he buzzes around the surface of his planet trying to save men from being tranformed into androids by the aliens. As you might expect, there's a long range scanner at the bottom of the screen that shows you where everything is and which men are in the greatest danger of androidisation(?). Then it's just a case of survival of the quickest as, weapons at the ready, you scoot left and right while the alien life-forms start massing around you.

Now *Dropzone* has come a long way since the original *Defender* in terms of technique. The graphics are nigh-on arcade quality and the sounds fantastic. I love the way your little man goes up like a roman candle when he finally cops it but I couldn't understand why the humans, despite being in danger of becoming androids, start off as little rolling spaceships. But I s'pose US Gold thinks we're a bunch of androids already if it thinks we're all going to rush out and buy this . . .

Steve From the dank cell where the cruel overseers had cast the noble Action Replay reviewers came an anguished cry — "Oh Gawd, another *Defender* clone?" And this one's even got a *Jet Pac* sprite in it! But escape was futile so the poor unfortunate resigned himself to his fate. Forty-five minutes later, he was hooked.

LIZ HEANEY

THE DAMBUSTERS
US Gold/£9.95 cassette £14.95 disk



Pete First there was *Ghostbusters* and now there's *Dambusters*. If there are any more busters in the pipeline they'd better be goodbusters because this one is a real blockbuster.

It's an incredibly sophisticated flight simulator which takes you through the wartime mission to destroy German dams using the famous bouncing bombs.

You control a Lancaster bomber but you're more than a mere pilot. As well as playing that role, you can switch to rear or front gunner, bomb aimer, navigator, first or second engineer and also a status report.

So, as you drone through the night over the Channel, you spot enemy planes ahead. Press button two and you're the gunner, ready for a bit of shoot 'em up action en route.

In order to fulfil your mission, you'll need to master the navigator's task (those damn dams aren't easy to find) and practice your bomb-aiming skills. Precision is essential.

Dambusters has enough options and skill levels to make it enjoyable from the very beginning as well as rewarding over the long term. As a mixture of combat and flight simulator, there's little to touch it.

Steve Strange how we should get two World War II flight simulators in the same month and both with the same high attention to detail. However, while in *Spitfire 40* there is only one view to look out for, six in this game make it far more complicated. But it's a bit intellectual for the likes of me. If you're looking for a dogfight, you're probably better off with *Spitfire*. Tally-ho chaps!

THE ROCKY HORROR SHOW
CRL/£8.95 cassette £12.95 disk



Steve Hot Patootie! It's perhaps inevitable that, following the mass plundering by software companies of any TV or film show that's still breathing, that someone would eventually get round to the *Rocky Horror Show*. It may seem like a good move as Frank and Co have developed a fanatical following over the years, but it's hard to see how the appeal (which is mostly due to the dialogue) could be translated into software. Still, CRL has had a bash.

The object of the game is for the player, either as Brad or Janet (the heroes of the play) to collect bits of the De-Medusa from around the castle and piece them together before the freezer explodes.

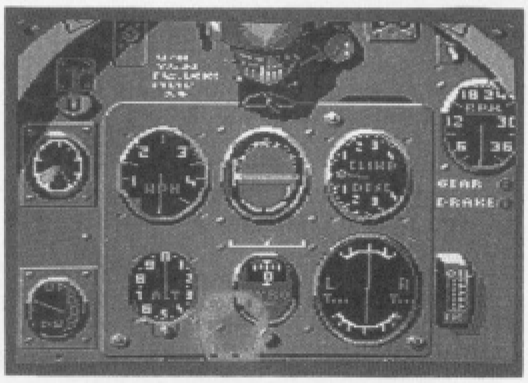
Naturally, you have to avoid running into Frank-n-Furter or his minions otherwise all your clothes fall off *(But it's all done in the best possible taste! Ed.)* and you have to retrieve them before you can collect any more pieces. What's more, you can either be killed by Riff Raff's (the butler) laser or Eddie's motorbikes.

The game's fairly easy and mostly a case of staying out of trouble. It's amusing and fun to play but I think it fails in the admittedly collosal task of capturing the flavour of the show.

Now let's see, it's just a jump to the left...

Pete This is the game of the musical that bent genders long before Boy George. It's got some nice graphics for the house of horrors, but didn't grab me as a game. I got very tired of having to do the 'time-warp' over and over again — and I've been listening to the music for ten years. This one hits rock bottom for me.

SPITFIRE 40
Mirrorsoft/£8.95 cassette £10.95 disk



Pete Could this be Mirrorsoft's final offering for the 64 now that kindly Uncle Bob Maxwell is to rescue Sir Clive from his dire financial straits?

Anyway, it's certainly something a bit different from Mirrorsoft — a simulation of Spitfire flight combat in the dark days of 1940.

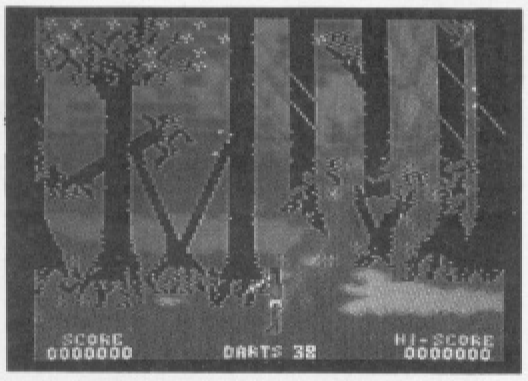
As the Luftwaffe attempts to bomb Britain into submission, you take your place as a newly trained Spitfire pilot determined to rise to the heights of Group Captain decorated with VC, DSO and DFC. The program presents three options, the first two — Practice and Combat Practice — merely being preparation for Combat. The Spitfire instrument panel is faithfully represented and you can toggle between this and the view through the cockpit window.

Taking off isn't too difficult but staying airborne is trickier. While you're up, the Merlin engine will make a horrible braying noise which is a point of authenticity I could have done without.

Once you're confident enough, it's chocks away and into combat. Here you buzz around in dogfights trying to blast the enemy with your Browning machine guns. It will take a lot of flying time to master this but you'll be glad you did.

Steve This is one of the few flight simulators that I have really taken a shine to. Although *Spitfire 40* is not without its difficulties, it's fairly easy to master — particularly when I discovered that adjusting the rudder stops you spinning around. The cockpit controls are authentic and the dogfights are great. I even managed to land the thing eventually!

AMAZON WARRIOR
New Generation Software/£7.95 cassette



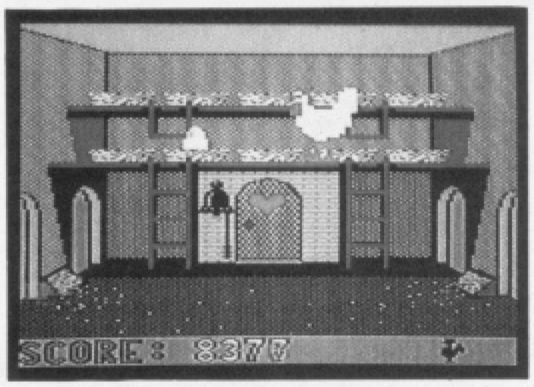
Pete Deep in the tropical tangle of the Amazonian jungle (where the reviewers sleep tonight), an Indian warrior, armed with nothing but a blowpipe and a loincloth, tears around the rather messy scenery trying to kill the creatures attacking him. On his intrepid journey, he's assaulted by the usual sort of writhing, flying snakes and overgrown scorpions. But their bark is worse than their sting — turn round and chase them and they'll scarper! And beware the nasty machette wielding man-with-a-moustache whose off-screen pals keep chucking spears at you.

Your only means of escape is to run for your life or stand and pray while hastily stuffing your blowpipe with the next shot. You have to be very careful — loading the pipe takes time and you've really got to pick your moment.

But if all this sounds like heart-racing, action packed stuff, don't be fooled! *Amazon Warrior* is a pale (and rather pointless) imitation of the excellent *Forbidden Forest* — the scenery is a little bit more limited and the nasties more stupid. New Gen had the kindness to supply a 255 lives version to help us poor ageing reviewers. I'm not sure it helped — I'd rather get bitten three times and get it over with than be lost forever in this one. Honestly, I don't know why some people bother . . .

Steve This has to be one of the silliest games I've seen in a long time. You have two options; run on the spot while the petite little forest scrolls by or take a break to stuff your blowpipe and get slimed by snakes for your trouble. Even the graphics don't make up for the lack of content. I'll give it five seconds!

CHICKIN CHASE
Firebird/£2.50 cassette



Steve Another offering from the Firebird Silver cheepo *(Groan! Ed)* range. As the cock of this particular walk, you must guard your wife's eggs from being guzzled by a host of unsavoury characters such as snakes, mice and hedgehogs. A swift peck usually sends them on their way.

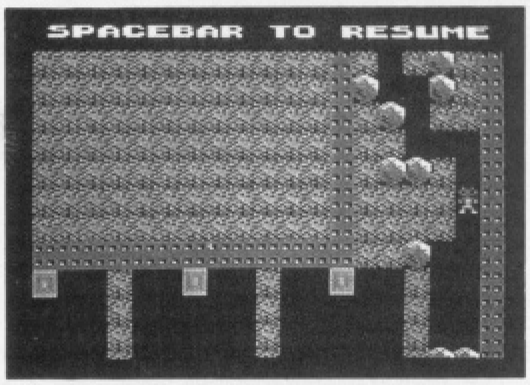
This game is French in origin and so offers a taste of that Gallic flavour with a certain amount of, 'ow you say, 'nookie' in it. (Maybe it's an eggs-rated game?). What you've got to do is visit her-indoors enough times to keep the egg quota up. Your daily dozen as it were! This, as you can well imagine, depletes your strength. Luckily there is a healthy supply of corn and the occasional worm to feed upon.

The game's OK and some of the design is quite humourous, but there's not enough of it. There are only two platforms to guard and the sprites are fully expanded so you soon discover the best way of guarding the two ladders leading up to the eggs. Furthermore, someone should tell the programmers that when you fully expand sprites, any lack of detail or bad design is cruelly exposed!

This oeuf is cracked and somewhat featherbrained! One for the birds . . .

Pete A very amusing idea — if a little below the belt! The hen-pecked cock stoically performs his duty as best as he can — and he's certainly good value for the price. It's worth letting the rodents and hedgehogs sneak past and steal the eggs just so you can see the menacing Mother hen bustle out and give her por ol' hubby a couple of bashes on the bonce! (I know the feeling!) Not a game of great subtlety or lasting interest.

ROCKFORD'S RIOT
Beyond/£9.95 cassette £11.95 disk



Pete This is Boulderdash II and it's even more difficult and addictive than its predecessor. And if you missed that particular cult craze, don't worry — it's on the other side of the tape.

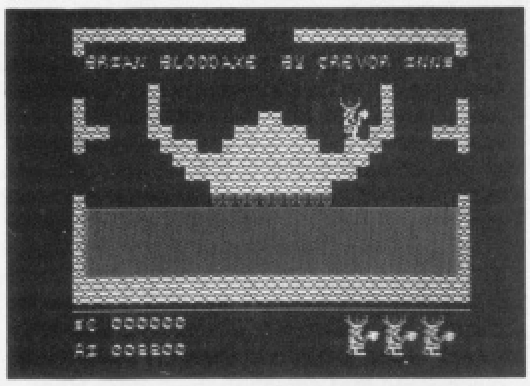
The principle is exactly the same but the new screens make the game even more tricky and involved. Rockford, that diminutive but loveable figure, has to collect diamonds from a variety of caves. He can tunnel around and push boulders but must beware their crushing force. Once he's collected enough diamonds, he must rush headlong to the exit before time runs out.

But simple it ain't. There are heaps of problems in the 16 different caves — all mind boggling and taking eons to suss out. How do you activate the enchanted wall, dodge the deadly fireflies or avoid the spreading, and equally deadly, amoeba? And this is just a taste of things to come.

And whilst you're puzzling over these problems time is running out — Rockford taps his foot impatiently and you pull your hair out with rage. But one thing's for sure, once defeated, you'll want to try again and again and again ...

Steve Those of you with long memories will recall the lukewarm reception I gave to *Boulderdash*, for which I subsequently received a great deal of stick. Although I could see the qualities of the game, it didn't appeal to me. Everybody else — yes, but not me! However, the follow up is a lot better since the various problems involved in getting Rockford to his diamonds are a lot more engaging. *(Coward! Ed)*.

BRIAN BLOODAXE
The Edge/£9.95 cassette £12.95 disk



Steve Have 'software nasties' finally arrived? No, it's just a jolly little historical story where Brian, a Viking, for reasons best known to himself has decided to conquer Britain. To achieve this dubious privilege, he must collect the crown jewels and sit on the throne — cue platforms game!

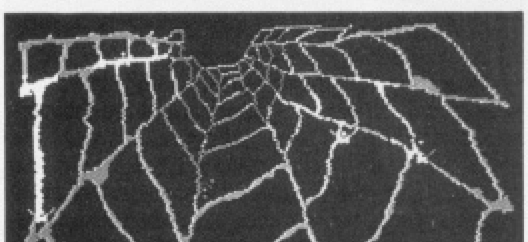
This game has been elsewhere described as a 'thinking man's Manic Miner' but I'm not so sure. I do think that Charles Bystram, the author of *Brian Bloodaxe* was frightened by a Monty Python sketch at a very early age (ah come on — Vikings? Brian? Hadn't you guessed?) since the Python theme tune plays constantly throughout. As such, the game attempts to be 'wacky' and, to be fair, it isn't all that bad. There are some good ideas and, while it isn't as mind-bendingly tricky as the blurb suggests, it is fairly absorbing.

However, the wackiest thing about Brian is some of the coding. Get Brian Bloodaxe to jump the right way and he can walk along a non-existent platform over the heads of the patrolling baddies.

The graphics are a little drab and somewhat Spectrumesque. I suggest that *Charles Bystram* cooks up the ideas and leaves the coding to someone else next time. At least it didn't have any dead parrots in it!

Pete *Brian Bloodaxe* is one of the jolliest arcade adventures I've come across in ages — 104 screens should keep anyone happy for weeks. The puzzles are witty, surpassing ye olde stomping boot (although that's included too) and the graphics ain't half bad. I'm a bit suspicious about Brian's ability to walk on water, but we'll let that pass.

WEB DIMENSION
Activision/£10.99 cassette £19.99 disk



Steve You know something? There should be a law against psychedelic 'entertainment' programs. It's not that they're dangerously addictive or anything, it's just that they're such crashing bores that they threaten to send the world to sleep.

The concept behind this piece of mind-rot is as follows. There is a spider's web which looks as if it was drawn with dribbles of oil paint. At the start of the game, a number of life forms (multi-coloured streaks of paint) start moving along the web. Your job is to ensure that these dribbles achieve a stable state by sealing the nodes of the web so that they are forced into viable patterns, else they disappear and start again, retracing the same path. Gripping!

And, should you succeed in this tedious exercise, the blurb promises 'exquisite effects', 'incredible music' and 'a new epoch'. All I got was the computer equivalent of a migraine.

Apparently, all this has something to do with Charles Darwin. What I think the programmer is trying to tell us, in his addled way, is that this is a mutant arcade version of the famous *Game Of Life* program. Still, Darwin will have his revenge. If it really is the 'survival of the fittest', this species doesn't have much of a future.

Pete The blurb says this is mind-blowing. It might numb your brain for good but it's hardly a pleasurable experience. Joystick control was a pain — I kept having to restart the game. Sorry, but I've yet to see a 'psychedelic' game that's anything more than a joke. Put this back on the shelf and let it enter the cobweb dimension.

We interrupt Action Replay to bring you an important

READER SURVEY

Tell us a bit about yourself ... and you could find yourself walking away with a Commodore SX-64 and a huge bundle of Commodore 64 software!

OK, you lot, we're looking for some criticism ... constructive criticism, of course! We'd like to know what you think of this and past issues of *Your 64* ...and, if you're lucky, you stand to win a prize of a Commodore SX-64 and a bumper bundle of software — all in the interests of bribery and corruption, of course, your Honour.

There are a few questions for you to answer about our glorious magazine ... and then there's a tie-breaker question asking you to come up with a new idea for the magazine. It's not that hard to do — poor ol' Alison has to do that each and every issue — but your answer could win you any one of the fabulous prizes we've got up for grabs.

The person coming up with the best idea will be awarded a Commodore SX-64 and a bumper bundle of 64 software (kindly donated by Commodore UK). The next four suggestions of merit will also carry away a bumper bundle of software. And, lastly, there'll be ten free subscriptions to *Your 64* for the runners-up.

Obviously, these questions are important to us — we know we're the best magazine for 64 users ... but how else are we going to make it better without getting some all-important feedback from you? Please read the issue before you fill in your answers and think seriously about those new ideas — remember there's a Commodore SX-64 to be won for the best one.

And just so you don't get out of pocket, you can send us this completed reader survey form (or a photocopy) for free. Simply bung it in an envelope and address it to *Readers' Survey, Your 64, FREEPOST 7, London W1E 4EZ.* Of course, if you're going to be sending us this form, why not slip in a letter as well, or your votes or high scores for the *Who Dares Wins* chart, your go-faster POKEs and arcade tips and your free ad for *Classified Info* ... need we say more?



Section One — About You

1. How old are you?

☐ Under 10 ☐ 10-15 ☐ 15-20
☐ 20-25 ☐ 25-35 ☐ Over 35

2. What sex are you? (if in doubt consult an expert!)

☐ Male ☐ Female

Section Two — About your machine and software

3. What equipment do you have at the moment and what are you planning to buy in the next year? If you're upgrading part of your system, please tick both boxes.

	Already own	About to buy
Commodore 64	☐	☐
1541 Disk Drive	☐	☐
Joystick	☐	☐
Monitor	☐	☐
Plotter	☐	☐
Printer	☐	☐
Light Pen/Graphics Tablet	☐	☐
Speech Unit	☐	☐
Modem Replacement	☐	☐
Keyboard	☐	☐

4. What type of software do you buy?

	Regularly	Occasionally
Arcade Games	☐	☐
Adventure Games	☐	☐
Utilities/Languages	☐	☐
Educational	☐	☐
Word Processing	☐	☐
Other business (eg Spreadsheets)	☐	☐
Graphics	☐	☐
Music	☐	☐

5. What do you use your machine for? Please enter 1 in the appropriate box for your main use, 2 for second and 3 for third.

Graphics	☐
Word Processing	☐
Other business (eg Spreadsheets)	☐
Programming/Languages	☐
Education	☐
Graphics	☐
Music	☐
Communications (eg Micronet)	☐

Section Three — About your reading habits

6. Which other magazines do you read, and how often?

	Regularly	Occasionally
Commodore User	☐	☐
Your Commodore	☐	☐
Commodore Horizons	☐	☐
Commodore Computing Int.	☐	☐
Zzapp 64	☐	☐
Computer & Video Games	☐	☐
Computer Gamer	☐	☐
Your Computer	☐	☐
Personal Computing Today	☐	☐
Popular Computing Weekly	☐	☐
Home Computer Weekly	☐	☐

7. How many magazines do your normally buy every month?

☐ 1 ☐ 2 or 3 ☐ 4 or more

8. Here is a list of the types of articles found in a typical issue of Your 64. For each type, please tell us if you'd like to see more, less or about the same amount in future issues.

	Less	Same	More
News	☐	☐	☐
Hardware Tips	☐	☐	☐
Hacking & Pokeing	☐	☐	☐
Software Charts/Top Scores	☐	☐	☐
Letters	☐	☐	☐
Competitions	☐	☐	☐
Hardware Reviews	☐	☐	☐
Megagame Reviews	☐	☐	☐
Short Game Reviews	☐	☐	☐
Other Software Reviews	☐	☐	☐
Book Reviews	☐	☐	☐
Programming Tips	☐	☐	☐
Listings to Key In	☐	☐	☐
Adventure Playing Tips	☐	☐	☐
Arcade Playing Tips	☐	☐	☐
Interviews	☐	☐	☐
Business	☐	☐	☐

Answer all the questions in the Readers' Survey, fill in this coupon and send the whole survey in an envelope to Readers' Survey, *Your 64*, FREEPOST 7, London W1Z 1ZE.

If you were the Editor of *Your 64*, what would be the first change you would make? ....

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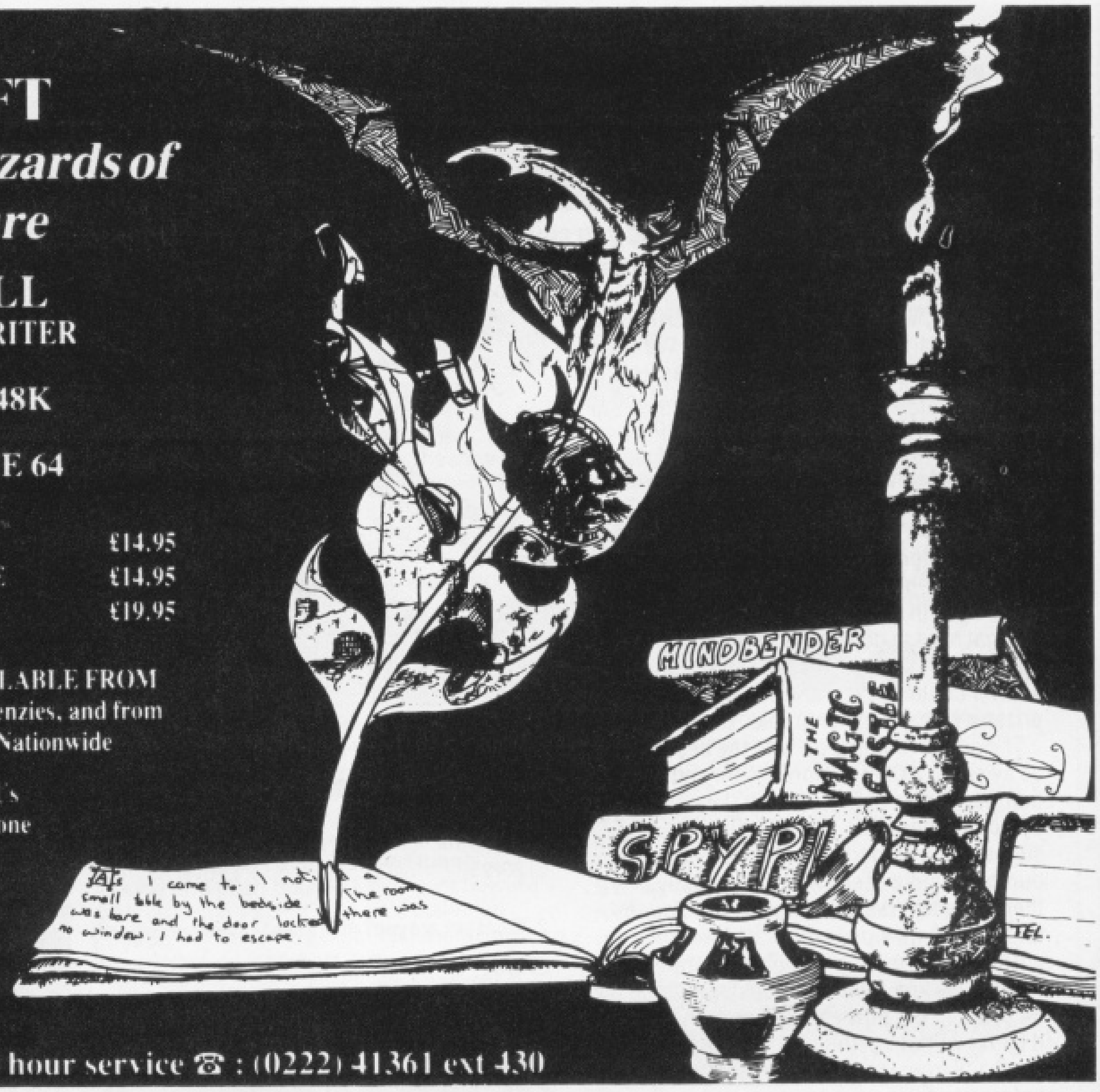
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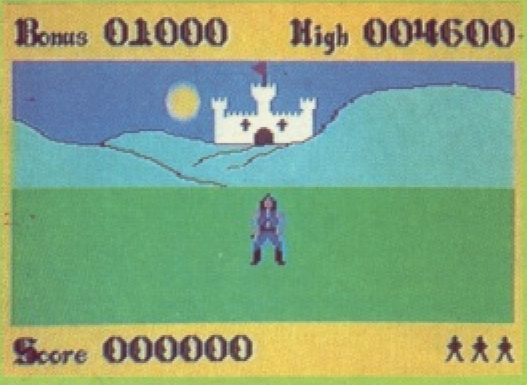
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TASKMASTER
Creative Sparks/£2.50 cassette



Steve After trudging through the jungle looking for the Almazz diamond, Creative Sparks has found another little job for you to perform — well, seven actually.

To win Princess Kelly's fair hand, you must complete seven tasks which the king has set you. These include spending a night with the zombies and killing the devil worshippers of the Temple of Demons.

As the handsome, if hippy looking hero *(What's wrong with hippies? Ed)*, it's mostly a case of moving around the screen avoiding your attackers while blasting away at them.

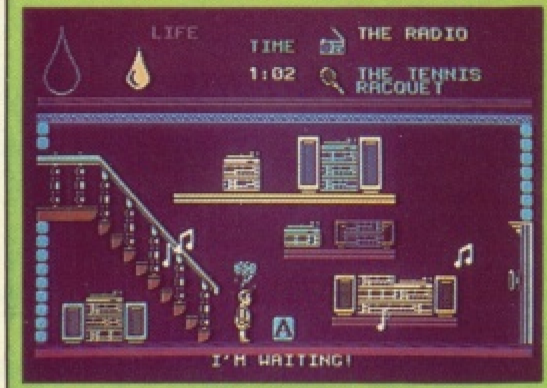
However, as the screen is a three dimensional perspective, you are left with the perennial problem of trying to work out where everyone is on a 2D screen. I found the best way round this is to walk towards whoever you are aiming at. This also prevents them from creeping up behind you.

The graphics are very good and the characters large enough to see some features — all of which adds to the realism.

Although not a wildly difficult game — a reasonably good player could probably crack it in a couple of hours solid playing — it's very attractive and compulsive while it lasts.

Pete One of the new cheapo Sparklers tapes and it shows! If you've ever typed in a listing from a mag called *Zombie Island* then you'll recognise the first level though *Taskmaster* removes some of the subtitles in favour of crude 3D graphics. After plugging my way through four levels, I began to wonder whether Princess Kelly's hand (or any other part) was worth it. Still, for those of you with Zombie-like dedication there must be an afternoon's play in it.

HERBERT'S DUMMY RUN
Mikro-Gen/£9.95 cassette



Pete Cor! Are we going to get a game about every member of Wally's family? I hope so. Here that monstrous child, Herbert, swathed in nappies and sucking his jumbo dummy, is lost — in a department store, of all places. Your job is to guide him back to his revolting parents, Wally and Wilma, who are waiting in the lost and found.

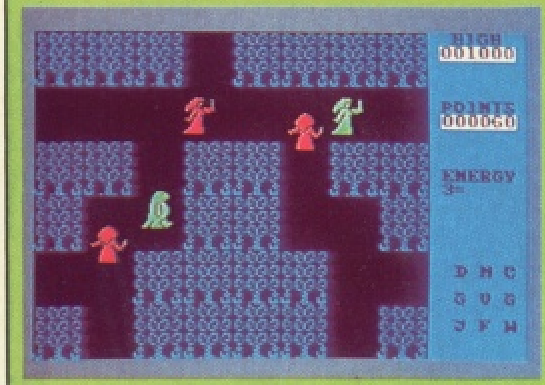
The game starts at 1pm and you must get to mum and dad by 5.30, which is presumably when the store closes. The journey is fraught with dangers for Herbert and pleasures for the player. For once, the adventure/arcade mix actually works. Not because either element will blow your brain cells due to the effort required, but because the whole thing is constructed with great wit and graphic sophistication.

In one sequence, Herbert can only get out of a room by playing a game of *Space Invaders* against marauding Daleks. So, what does he fire? His dummy, dummy! But this game's not child's play since the hordes of nasties bump you off very swiftly.

Superb graphics and the adventure element will keep you playing till way past cot-time!

Steve Strewth! Some companies don't hang about. No sooner has it won a much coveted splash in *Your 64* than Mikro-Gen rushes out with the follow up! This game is a bit like the highly rated *Henry's House* with a lot more rooms to explore. The animation is excellent and you'll certainly have lots of fun rushing around the store in the attempt to get little Herbert back to his folks on time.

LANDS OF HAVOC
Microdeal/£6.95 cassette



Pete If you've ever felt the desire to play the role of 'a stranger, a reptile, a saviour', this is the game for you.

Your meaty mission is to save the land of Haven, once protected by that famous magician, the High Vanish. Then came the Dark Lords, who turned it into a land of havoc. As Sador, you have to put all to right.

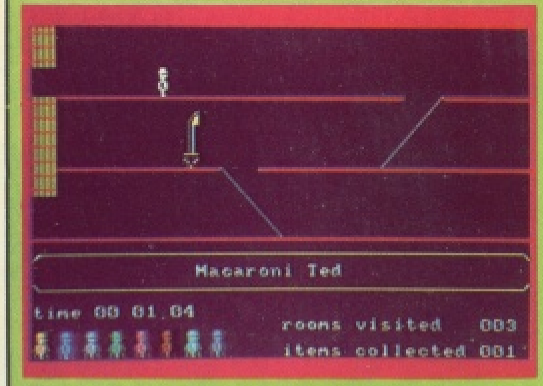
You start in the forest and are assisted in your quest by nine map-cards. Your first task is to scour the village for the Book of Change. But the cards only help with the initial stages — Microdeal claims there are a hefty 2000 more screens. Is this a record?

What you get on screen is a *Sabre Wulf* style maze with *Robotron*-ish blasting. You are an ugly green thing and your opponents are even uglier, not to mention their capacity to reproduce like rabbits.

There's lots and lots of blasting, searching and picking up your maps as they fall on the floor. The map-cards seemed a fab new goodie to stuff into the box but you just don't get time to look at them! Maybe not quite interesting enough to make it an outright winner, but the size is certainly to its credit.

Steve For some time, Microdeal has been working towards writing the 'Ultimate' arcade adventure and *Lands of Havoc* seems to be it. *Lands of Havoc* looks very similar in execution to games like *Sabre Wulf*. However, this one has lots of picture postcards from the graveyard and other fun places to visit. Those wishing they could hunt with Sabre Man along with their Spectrum owning friends could do a lot worse (like buying a Spectrum!).

JET SET WILLY II
Software Projects/£9.95 cassette



Steve What can I say about this one? The game that has divided the nation between those smug little know-alls who've completed it and the poor frustrated majority who are forever stuck in some room or other with an object a tantalising few inches away.

For the record, Software Projects has caved in to the demand of the know-alls for extra rooms to potter around in. The extended play version now encompasses 100 locations. The new rooms were apparently installed by little green builders while Willy was convalescing from *JSW*. Meanwhile, housekeeper Maria is still nagging poor Willy about the mess, so off we go ...

The problems are as fiendish as ever — the extra locations being as surreal and awkward as their predecessors. But, if I may be allowed to introduce a sour note, I feel that Software Projects is treading water with this one. While *JSW* is an undoubted classic, the game is looking a little dated these days. What's more, while the hordes may have been demanding more Willy, is it fair to charge full price for a game which is merely an extension of one they already have? Not that what I say matters — you'll probably all rush out and buy it anyway!

Pete Arrgh! It's come back to haunt me. I found *Jet Set Willy I* bad enough but I suppose there are enough masochists around to merit adding extra rooms. Some of them don't have the authentic Matthew Smith madness, which isn't surprising since he didn't write the new stuff. C'mon Matthew — where are you when we need you? Willy can't live forever!



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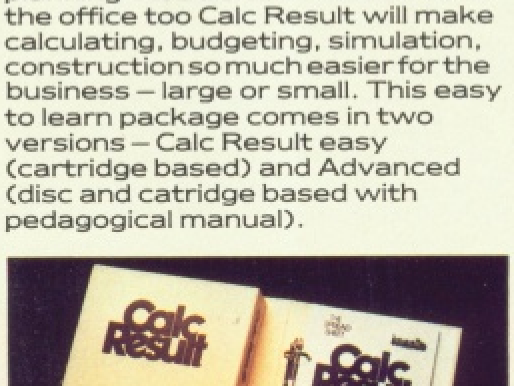
Database, for example, is a brand new, cartridge and disc based software package. Especially designed for both, first time and experienced data base users.

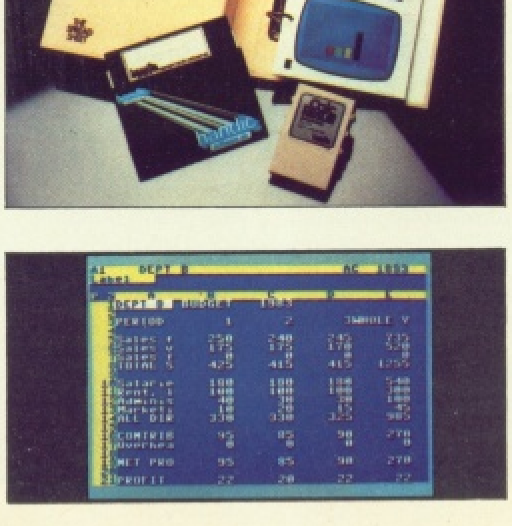
For those of you who need to collate and store information for easy recall, data base can make life easier. The basic package includes a mailing list and 4 different print programs.



CALC RESULT

Calc Result, the financial spreadsheet for the 64, that's ideal for all those domestic headaches, such as loans, mortgages, home budgeting, stock portfolios, tax planning – let alone all those bills! In the office too Calc Result will make calculating, budgeting, simulation, construction so much easier for the business – large or small. This easy to learn package comes in two versions – Calc Result easy (cartridge based) and Advanced (disc and catridge based with pedagogical manual).





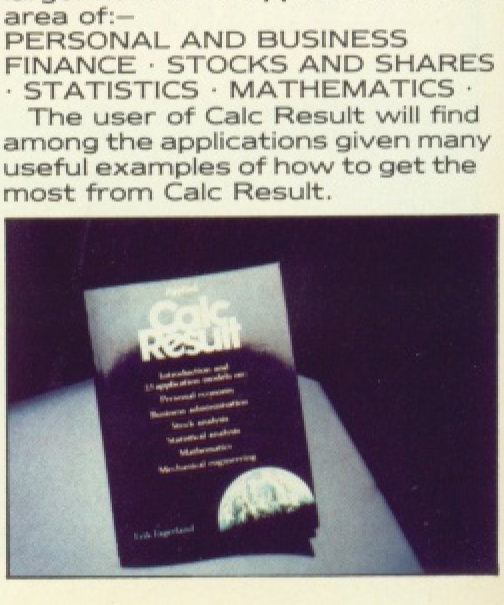
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- **Spread sheet size** 64 X 254 X 32 pages
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THE Handic supermarket basket is full of 'goodies' for your Commodore 64. Here is a brief description of what they all are! Don't forget – if you need any more information, either clip the coupon (and tick column 'A') or give us a ring.

1 Mon 64
An outstanding Machine Code Monitor (cartridge based)

2 Teledata
Communication cartridge for use with the CBM 64, link up with Databases like the bank or supermarket, over the telephone lines.

3 Superbox 64
An expansion unit for the Commodore, which features three independant cartridge slots; IEEE interface that is totally transparent; has multi-user capabilities with IEEE; and a re-set switch which activates a cold start on the computer. This unit will connect up to 3 cartridges at the same time, which makes frequent altering between programs simple and reduces wear on the cartridge slot.

4 Vic Rel
Vic Rel (Rel 64) is a relay cartridge for the CBM 64 and Vic 20 which has almost limitless applications, such as control of burglar alarms, garage doors, door locks, electric radiators, lamps , transmitters, model railways, etc.etc.

5 Disc-based games
Handic have a set of disc based games for the Commodore 64, all are great fun and superb colour graphics. At around 9.95 each. Why not treat yourself to a few?
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6 Diary 64
An ideal program for keeping track of telphone numbers, addresses, appointments, schedules, in fact the ideal time manager for all you sieve-heads.

7 Stat 64
The statistical CBM cartridge which ads 19 new commands to your Basic language. An excellent programming aid for all you statisticians.

8 Graf 64
A CBM cartridge that turns solutions of equations into graphical analysis, what you might call a plotter-jotter.

9 Handic Auto Modem
This modem is the expanded version of the Videotex modem (see illustration). When used together with the Handic Teledata Base 64 this unit enables you to set up your own data base with information.



Videotex Split-Speed Modem
This Split-Speed modem is especially designed to connect with computers over the telephone lines, its facilities include auto-dialling, line control, etc. (BT approval applied for).

10 RS232
A standard V.24 (RS232) interface for connecting the CBM 64 to printers and other peripherals.

11 Bridge 64
A cartridge bridge game for the intelligentsia.

12 Forth 64
A Forth generation programming language for people who know what they are talking about, and want to know even more.

Checklist



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PROGRAMMER OF THE YEAR

Your 64 · Commodore

John Ireland moves into the running for the programmer of the year prize with his machine-coded Trace utility.

Here's our first machine-code entry in the 64 Programmer of the Year compo. John Ireland's utility will be a blessing for budding Basic programmers and probably a handy help for some old timers as well. If you want to avoid the technicalities, just type in and run the Basic loader. Remember to SAVE it before you run it for the first time as a drastic error might crash the 64. For the techies among you, we've included a disassembly so you can see how it's done.

Once loaded, you'll find the commands TRON, TROFF and VAR added to your 64's repertoire. VAR lists the names of all active variables. TRON turns tracing on and TROFF turns it off again. When you're tracing, a small window appears in the top right of the screen showing the line being executed and the four previous lines. You can also vary the speed of the trace by POKEing 679 and 680 — set them both to 1 for the fastest trace and to 255 for the slowest.

The program normally loads itself in just below the top of memory but you can place it anywhere you like. To do this, make a note of PEEK(55) and PEEK(56). Work out where the 850 byte program will end in memory and POKE this into 55 and 56. Remove the CLR instruction from line 160 and run the loader. Finally, POKE 55 and 56 back to their original values, enter CLR and away you go...

Everything about this program is neatly done. The Basic loader checks each DATA line individually, the trace produces a neat window rather than filling the screen with numbers like some trace programs and so on. Can you do better? If so, we'd like to hear from you ...



Where do you go from the 64? There's only one better — a 64 compatible computer with 128K memory and the ability to run CP/M software — Commodore's 128. And there's only one way to own one — by becoming 64 Programmer of the Year...

Madcap Recap

If you've been too busy working on your entry to remember the competition, here goes: In association with Commodore UK, we're looking for the 64 Programmer of the Year. The lucky winner not only gets the longest accolade in town but one of the brand-new, you name it — I do it, Commodore 128s.

In the meantime, each month, we'll be printing some of the best entries so far..Each of the published entrants gets not only the usual generous fee from the mag but £50 worth of software courtesy of Commodore UK.

Your program can be anything you like — a game, a utility or an application — as long as it's less than 10K in length. Machine coders might have an advantage but we're looking for brain not brawn. Programs will be judged for style, presentation, ease of use but above all for original ideas. All you do is send us a listing, some program notes and a copy of the game on tape or disk. Closing date for entries is October 31st 1985 but if you've already got a masterpeice send it now to take advantage of the early judging. Entries should be sent to Programmer of the Year, *Your 64*, 14 Rathbone Place, London W1P 1DE. Fame, fortune and a hot new 128 could be yours...

Basic Loader for Trace program

```
10 MT=40960-(PEEK(55)+256*PEEK(56)):OM=I
NT(MT/256):OL=MT-OM*256
20 BE=PEEK(55)+256*PEEK(56)-850:B=BE
```

Lines 10-20 Work out where to load the machine code.

```
30 READN:IFN=-1THEN110
40 IFN>255THEN90
50 T=T+N:IFN<0THEN70
60 POKEB,N:B=B+1:GOTO30
70 C=0:N=ABS(N)-OL:IFN<0THENN=N+256:C=-1
80 POKEB,N:B=B+1:READN:T=T+N:POKEB,N-OM+
C:B=B+1:GOTO30
```

Lines 30-80 POKE one line of bytes into memory.

```
90 IFT<>NTHENPRINT"DATA ERROR IN LINE"PE
EK(63)+256*PEEK(64):END
```

Line 90 Checks for DATA errors in each line.

```
100 PRINTPEEK(63)+256*PEEK(64):T=0:GOTO30
```

Line 100 Prints the line number of the line just successfully POKEd into memory.

```
110 A=BE+25:AM=INT(A/256):AL=A-AM*256:PO
KEBE+13,AL:POKEBE+18,AM
120 A=BE+256:AM=INT(A/256):AL=A-AM*256:P
OKEBE+94,AL:POKEBE+99,AM
130 A=BE+545:AM=INT(A/256):AL=A-AM*256:P
OKEBE+138,AL:POKEBE+143,AM
140 AM=INT(BE/256):AL=BE-AM*256:POKE55,A
L:POKE56,AM
```

Lines 110-140 Adjust bytes to make sure program runs correctly at any location in memory. Also adjusts the top of Basic's free memory to protect the machine code program.

```
150 PRINT"MEMORY LOCATIONS TO CONTROL RU
NNING     SPEED OF TRACE = 679 AND 680"
```

Line 150 Prints instructions for adjusting speed of trace.

```
160 SYSBE.CLR.END
```

Line 160 Calls the program to initialise the new commands and returns to Basic.

```
170 DATA173,0,3,141,-9,157,173,1,3,141,-
10,157,169,199,141,0,3,1442
175 DATA169,156,141,1,3,96,160,160,8,72,
138,72,152,72,173,0,3,141,-197,156,1676
180 DATA173,1,3,141,-198,156,162,0,189,-
155,159,240,43,221,0,2,208,3,1348
190 DATA232,208,243,189,-144,159,240,64,
221,0,2,208,3,232,208,243,189,2497
200 DATA-149,159,240,39,221,0,2,208,3,23
2,208,243,104,168,104,170,104,40,2096
210 DATA76,139,227,169,174,141,0,3,169,1
57,141,1,3,76,-67,157,104,168,104,1942
220 DATA170,104,40,76,116,164,169,228,14
1,8,3,169,167,141,9,3,208,235,162,2313
230 DATA24,169,160,157,-228,159,202,16,2
50,169,207,141,8,3,169,158,141,9,3,1917
240 DATA208,213,32,92,166,169,147,32,210
,255,169,15,141,33,208,141,32,208,2471
250 DATA165,43,166,44,133,122,134,123,16
0,0,177,122,141,60,3,200,177,122,2092
260 DATA141,61,3,208,3,76,-239,157,24,16
5,122,105,3,133,122,165,123,105,0,1477
270 DATA133,123,32,115,0,201,0,240,8,201
,143,240,4,201,131,208,12,173,60,3,2228
280 DATA174,61,3,133,122,134,123,208,198
,201,34,208,11,32,115,0,201,0,240,2198
290 DATA233,201,34,208,245,201,134,208,1
2,32,115,0,32,129,176,32,121,0,24,2137
300 DATA144,201,201,150,208,37,165,122,1
33,251,165,123,133,252,32,115,0,32,2464
310 DATA225,179,32,185,179,165,251,133,1
22,165,252,133,123,2144
320 DATA32,115,0,32,115,0,32,115,0,24,14
4,157,201,165,1132
330 DATA240,243,201,65,144,149,201,91,17
6.145.32.139.1826
340 DATA176,24,144,191,165,45,166,46,133
,251,134,252,197,47,208,4,228,48,2459
350 DATA240,39,162,0,189,-159,159,240,6,
32,210,255,232,208,245,32,-123,158,2125
360 DATA24,165,251,105,7,133,251,165,252
,105,0,133,252,197,48,208,236,165,2697
370 DATA251,197,47,208,230,165,47,166,48
,133,251,134,252,197,49,208,4,228,2815
380 DATA50,240,41,162,0,189,-191,159,240
,6,32,210,255,232,208,245,32,2110
390 DATA-123,158,24,160,2,177,251,101,25
1,170,200,177,251,101,252,133,252,2537
400 DATA134,251,197,50,208,232,228,49,20
8,228,169,0,141,0,2,173,-197,156,2229
410 DATA141,0,3,173,-198,156,141,1,3,162
,251,154,76,123,227,160,160,160,1893
420 DATA160,160,160,0,177,251,72,41,128,
133,19,104,41,127,32,210,255,200,2270
430 DATA177,251,72,41,128,133,20,104,41,
127,240,3,32,210,255,165,20,10,165,2194
440 DATA19,106,240,21,201,192,208,4,169,
37,208,10,201,128,208,4,169,36,208,2369
450 DATA2,169,35,32,210,255,169,32,32,21
0,255,56,32,240,255,192,36,144,10,2366
460 DATA224,23,176,6,160,0,232,32,240,25
5,96,8,72,152,72,138,72,166,58,232,2414
470 DATA208,9,104,170,104,168,104,40,76,
228,167,169,216,162,35,134,253,2347
480 DATA133,254,162,4,160,4,173,33,208,2
4,105,8,73,15,145,253,136,16,251,2157
490 DATA24,165,253,105,40,133,253,202,16
,231,165,251,197,57,208,6,165,252,2723
500 DATA197,58,240,67,162,4,189,-233,159
,157,-228,159,189,-238,159,157,1198
510 DATA-233,159,189,-243,159,157,-238,1
59,189,-248,159,157,-243,159,169,451
520 DATA160,157,-248,159,202,16,224,166,
57,165,58,134,99,133,98,162,144,56,1942
530 DATA32,73,188,32,221,189,162,1,160,0
,189,0,1,240,7,153,-248,159,232,1791
540 DATA200,208,244,169,4,133,254,169,19
5,133,253,162,24,160,4,189,2501
550 DATA-228,159,9,128,145,253,202,136,1
6,245,56,165,253,233,40,133,253,2198
560 DATA138,16,233,165,57,133,251,165,58
,133,252,172,167,2,174,168,2,202,2488
570 DATA208,253,136,208,247,76,-218,158,
160,160,160,84,82,145,0,0,84,82,79,2104
580 DATA70,70,0,86,65,82,0,28,18,29,29,2
9,29,29,29,29,29,29,29,29,29,29,825
590 DATA32,86,65,82,73,65,66,76,69,83,32
,146,17,13,151,0,17,13,28,18,29,29,1190
600 DATA29,29,29,29,29,29,29,29,29,32,65
,82,82,65,89,32,86,65,82,73,65,66,1145
610 DATA76,69,83,32,146,17,13,151,0,160,
160,160,160,160,160,160,160,160,2027
620 DATA160,160,160,160,160,160,160,160,
160,160,160,160,160,160,2240
630 DATA160,160,0,0,0,320,-1
```

Lines 170-630 DATA statements containing machine code.

Disassembly of Trace program

```
CCAE  AD0003    LDA  $0300
CCB1  8D09CD    STA  $CD09
CCB4  AD0103    LDA  $0301
CCB7  8D0ACD    STA  $CD0A
CCBA  A9C7      LDA  #$C7
CCBC  8D0003    STA  $0300
CCBF  A9CC      LDA  #$CC
CCC1  8D0103    STA  $0301
CCC4  60        RTS
```

$CCAE-$CCC4 Initialisation code. Called when the program is first loaded to hook it into the Basic error vector.

```
CCC5  C7CC           BYT $C7,$CC
```

$CCC5-$CCC6 Temporary storage for Basic error vector.

```
CCC7  08        PHP
CCC8  48        PHA
CCC9  8A        TXA
CCCA  48        PHA
CCCB  98        TYA
CCCC  48        PHA
CCCD  AD0003    LDA  $0300
CCD0  8DC5CC    STA  $CCC5
CCD3  AD0103    LDA  $0301
CCD6  8DC6CC    STA  $CCC6
CCD9  A200      LDX  #$00
CCDB  BD9BCF    LDA  $CF9B,X
CCDE  F02B      BEQ  $CD0B
CCE0  DD0002    CMP  $0200,X
CCE3  D303      BNE  $CCE8
CCE5  E8        INX
CCE6  D0F3      BNE  $CCDB
CCE8  BD90CF    LDA  $CF90,X
CCEB  F040      BEQ  $CD2D
CCED  DD0002    CMP  $0200,X
CCF0  D903      BNE  $CCF5
CCF2  E8        INX
CCF3  D0F3      BNE  $CCE8
CCF5  BD95CF    LDA  $CF95,X
CCF8  F027      BEQ  $CD21
CCFA  DD0002    CMP  $0200,X
CCFD  D003      BNE  $CD02
CCFF  E8        INX
CD00  D0F3      BNE  $CCF5
CD02  68        PLA
CD03  A8        TAY
CD04  68        PLA
CD05  AA        TAX
CD06  68        PLA
CD07  28        PLP
CD08  4C8BE3    JMP  $E38B
CD0B  A9AE      LDA  #$AE
CD0D  8D0003    STA  $0300
CD10  A9CD      LDA  #$CD
CD12  8D0103    STA  $0301
```

YOUR 64 MISELLANEAD

CALL PENNY ON 631-1433 EXT 31 FOR RATES & DATA

```
CD15  4C43CD   JMP  $CD43
CD18  68       PLA
CD19  A8       TAY
CD1A  68       PLA
CD1B  AA       TAX
CD1C  68       PLA
CD1D  28       PLP
CD1E  4C74A4   JMP  $A474
CD21  A9E4     LDA  #$E4
CD23  8D0803   STA  $0308
CD26  A9A7     LDA  #$A7
CD28  8D0903   STA  $0309
CD2B  D0EB     BNE  $CD18
CD2D  A218     LDX  #$18
CD2F  A9A0     LDA  #$A0
CD31  9DE4CF   STA  $CFE4,X
CD34  CA       DEX
CD35  10FA     BPL  $CD31
CD37  A9CF     LDA  #$CF
CD39  8D0803   STA  $0308
CD3C  A9CE     LDA  #$CE
CD3E  8D0903   STA  $0309
CD41  D0D5     BNE  $CD18
```

SCCC7-SCC42 Checks for TRON, TROFF and VAR and executes the relevant routines.

```
CD43  205CA6   JSR  $A65C
CD46  A993     LDA  #$93
CD48  20D2FF   JSR  $FFD2
CD4B  A90F     LDA  #$0F
CD4D  8D21D0   STA  $D021
CD50  8D20D0   STA  $D020
CD53  A52B     LDA  $2B
CD55  A62C     LDX  $2C
CD57  857A     STA  $7A
CD59  867B     STX  $7B
CD5B  A000     LDY  #$00
CD5D  B17A     LDA  ($7A),Y
CD5F  8D3C03   STA  $033C
CD62  C8       INY
CD63  B17A     LDA  ($7A),Y
CD65  8D3D03   STA  $033D
CD68  D003     BNE  $CD6D
CD6A  4CEFCD   JMP  $CDEF
CD6D  18       CLC
CD6E  A57A     LDA  $7A
CD70  6903     ADC  #$03
CD72  857A     STA  $7A
CD74  A57B     LDA  $7B
CD76  6900     ADC  #$00
CD78  857B     STA  $7B
CD7A  207300   JSR  $0073
CD7D  C900     CMP  #$00
CD7F  F008     BEQ  $CD89
CD81  C98F     CMP  #$8F
CD83  F004     BEQ  $CD89
CD85  C983     CMP  #$83
CD87  D00C     BNE  $CD95
CD89  AD3C03   LDA  $033C
CD8C  AE3D03   LDX  $033D
CD8F  857A     STA  $7A
CD91  867B     STX  $7B
CD93  D0C6     BNE  $CD5B
CD95  C922     CMP  #$22
CD97  D00B     BNE  $CDA4
CD99  207300   JSR  $0073
CD9C  C900     CMP  #$00
CD9E  F0E9     BEQ  $CD89
CDA0  C922     CMP  #$22
CDA2  D0F5     BNE  $CD99
CDA4  C986     CMP  #$86
CDA6  D00C     BNE  $CDB4
CDA8  207300   JSR  $0073
CDAB  2081B0   JSR  $B081
CDAE  207900   JSR  $0079
CDB1  18       CLC
CDB2  90C9     BCC  $CD7D
CDB4  C996     CMP  #$96
CDB6  D025     BNE  $CDDD
CDB8  A57A     LDA  $7A
CDBA  85FB     STA  $FB
CDBC  A57B     LDA  $7B
CDBE  85FC     STA  $FC
CDC0  207300   JSR  $0073
CDC3  20E1B3   JSR  $B3E1
CDC6  20B9B3   JSR  $B3B9
CDC9  A5FB     LDA  $FB
CDCB  857A     STA  $7A
CDCD  A5FC     LDA  $FC
CDCF  857B     STA  $7B
CDD1  207300   JSR  $0073
CDD4  207300   JSR  $0073
CDD7  207300   JSR  $0073
CDDA  18       CLC
CDDB  909D     BCC  $CD7A
CDDD  C9A5     CMP  #$A5
CDDF  F0F3     BEQ  $CDD4
CDE1  C941     CMP  #$41
CDE3  9095     BCC  $CD7A
CDE5  C95B     CMP  #$5B
CDE7  B091     BCS  $CD7A
CDE9  208BB0   JSR  $B08B
CDEC  18       CLC
CDED  90BF     BCC  $CDAE
CDEF  A52D     LDA  $2D
CDF1  A62E     LDX  $2E
CDF3  85FB     STA  $FB
CDF5  86FC     STX  $FC
CDF7  C52F     CMP  $2F
CDF9  D004     BNE  $CDFF
CDFB  E430     CPX  $30
CDFD  F027     BEQ  $CE26
CDFF  A200     LDX  #$00
CE01  BD9FCF   LDA  $CF9F,X
CE04  F006     BEQ  $CE0C
CE06  20D2FF   JSR  $FFD2
CE09  E8       INX
CE0A  D0F5     BNE  $CE01
CE0C  207BCE   JSR  $CE7B
CE0F  18       CLC
CE10  A5FB     LDA  $FB
CE12  6907     ADC  #$07
CE14  85FB     STA  $FB
CE16  A5FC     LDA  $FC
CE18  6900     ADC  #$00
CE1A  85FC     STA  $FC
CE1C  C530     CMP  $30
CE1E  D0EC     BNE  $CE0C
CE20  A5FB     LDA  $FB
CE22  C52F     CMP  $2F
CE24  D0E6     BNE  $CE0C
CE26  A52F     LDA  $2F
CE28  A630     LDX  $30
CE2A  85FB     STA  $FB
CE2C  86FC     STX  $FC
CE2E  C531     CMP  $31
CE30  D004     BNE  $CE36
CE32  E432     CPX  $32
CE34  F029     BEQ  $CE5F
CE36  A200     LDX  #$00
CE38  BDBFCF   LDA  $CFBF,X
CE3B  F006     BEQ  $CE43
CE3D  20D2FF   JSR  $FFD2
CE40  E8       INX
CE41  D0F5     BNE  $CE38
CE43  207BCE   JSR  $CE7B
CE46  18       CLC
CE47  A002     LDY  #$02
CE49  B1FB     LDA  ($FB),Y
CE4B  65FB     ADC  $FB
CE4D  AA       TAX
CE4E  C8       INY
CE4F  B1FB     LDA  ($FB),Y
CE51  65FC     ADC  $FC
CE53  85FC     STA  $FC
CE55  86FB     STX  $FB
CE57  C532     CMP  $32
CE59  D0E8     BNE  $CE43
CE5B  E431     CPX  $31
CE5D  D0E4     BNE  $CE43
CE5F  A900     LDA  #$00
CE61  8D0002   STA  $0200
CE64  ADC5CC   LDA  $CCC5
CE67  8D0003   STA  $0300
CE6A  ADC6CC   LDA  $CCC6
CE6D  8D0103   STA  $0301
CE70  A2FB     LDX  #$FB
CE72  9A       TXS
CE73  4C7BE3   JMP  $E37B
CE7B  A000     LDY  #$00
CE7D  B1FB     LDA  ($FB),Y
CE7F  48       PHA
CE80  2980     AND  #$80
CE82  8513     STA  $13
CE84  68       PLA
CE85  297F     AND  #$7F
CE87  20D2FF   JSR  $FFD2
CE8A  C8       INY
CE8B  B1FB     LDA  ($FB),Y
CE8D  48       PHA
CE8E  2980     AND  #$80
CE90  8514     STA  $14
CE92  68       PLA
CE93  297F     AND  #$7F
CE95  F003     BEQ  $CE9A
CE97  20D2FF   JSR  $FFD2
CE9A  A514     LDA  $14
CE9C  0A       ASL  A
CE9D  A513     LDA  $13
CE9F  6A       ROR  A
CEA0  F015     BEQ  $CEB7
CEA2  C9C0     CMP  #$C0
CEA4  D004     BNE  $CEAA
CEA6  A925     LDA  #$25
CEA8  D00A     BNE  $CEB4
CEAA  C980     CMP  #$80
CEAC  D004     BNE  $CEB2
CEAE  A924     LDA  #$24
CEB0  D002     BNE  $CEB4
CEB2  A923     LDA  #$23
CEB4  20D2FF   JSR  $FFD2
CEB7  A920     LDA  #$20
CEB9  20D2FF   JSR  $FFD2
CEBC  38       SEC
CEBD  20F0FF   JSR  $FFF0
CEC0  C024     CPY  #$24
CEC2  900A     BCC  $CECE
CEC4  E017     CPX  #$17
CEC6  B006     BCS  $CECE
CEC8  A000     LDY  #$00
CECA  E8       INX
CECB  20F0FF   JSR  $FFF0
CECE  60       RTS
```

SCD43-SCECE Variable list routines.

```
CECF  08       PHP
CED0  48       PHA
CED1  98       TYA
CED2  48       PHA
CED3  8A       TXA
CED4  48       PHA
CED5  A63A     LDX  $3A
CED7  E8       INX
CED8  D009     BNE  $CEE3
CEDA  68       PLA
CEDB  AA       TAX
```

```
CEDC   68       PLA
CEDD   A8       TAY
CEDE   68       PLA
CEDF   28       PLP
CEE0   4CE4A7   JMP   $A7E4
CEE3   A9D8     LDA   #$D8
CEE5   A223     LDX   #$23
CEE7   86FD     STX   $FD
CEE9   85FE     STA   $FE
CEEB   A204     LDX   #$04
CEED   A004     LDY   #$04
CEEF   AD21D0   LDA   $D021
CEF2   18       CLC
CEF3   6908     ADC   #$08
CEF5   490F     EOR   #$0F
CEF7   91FD     STA   ($FD),Y
CEF9   88       DEY
CEFA   10FB     BPL   $CEF7
CEFC   18       CLC
CEFD   A5FD     LDA   $FD
CEFF   6928     ADC   #$28
CF01   85FD     STA   $FD
CF03   CA       DEX
CF04   10E7     BPL   $CEED
CF06   A5FB     LDA   $FB
CF08   C539     CMP   $39
CF0A   D006     BNE   $CF12
CF0C   A5FC     LDA   $FC
CF0E   C53A     CMP   $3A
CF10   F043     BEQ   $CF55
CF12   A204     LDX   #$04
CF14   BDE9CF   LDA   $CFE9,X
CF17   9DE4CF   STA   $CFE4,X
CF1A   BDEECF   LDA   $CFEE,X
CF1D   9DE9CF   STA   $CFE9,X
CF20   BDF3CF   LDA   $CFF3,X
CF23   9DEECF   STA   $CFEE,X
CF26   BDF8CF   LDA   $CFF8,X
```

```
CF29   9DF3CF   STA   $CFF3,X
CF2C   A9A0     LDA   #$A0
CF2E   9DF8CF   STA   $CFF8,X
CF31   CA       DEX
CF32   10E0     BPL   $CF14
CF34   A639     LDX   $39
CF36   A53A     LDA   $3A
CF38   8663     STX   $63
CF3A   8562     STA   $62
LF3C   A290     LDX   #$90
CF3E   38       SEC
CF3F   2049BC   JSR   $BC49
CF42   20DDBD   JSR   $BDDD
CF45   A201     LDX   #$01
CF47   A000     LDY   #$00
CF49   BD0001   LDA   $0100,X
CF4C   F007     BEQ   $CF55
CF4E   99F8CF   STA   $CFF8,Y
CF51   E8       INX
CF52   C8       INY
CF53   D0F4     BNE   $CF49
CF55   A904     LDA   #$04
CF57   85FE     STA   $FE
CF59   A9C3     LDA   #$C3
CF5B   85FD     STA   $FD
CF5D   A218     LDX   #$18
CF5F   A004     LDY   #$04
CF61   BDE4CF   LDA   $CFE4,X
CF64   0980     ORA   #$80
CF66   91FD     STA   ($FD),Y
CF68   CA       DEX
CF69   88       DEY
CF6A   10F5     BPL   $CF61
CF6C   38       SEC
CF6D   A5FD     LDA   $FD
CF6F   E928     SBC   #$28
CF71   85FD     STA   $FD
CF73   8A       TXA
```

```
CF74   10E9     BPL   $CF5F
CF76   A539     LDA   $39
CF78   85FB     STA   $FB
CF7A   A53A     LDA   $3A
CF7C   85FC     STA   $FC
CF7E   ACA702   LDY   $02A7
CF81   AEA802   LDX   $02A8
CF84   CA       DEX
CF85   D0FD     BNE   $CF84
CF87   88       DEY
CF88   D0F7     BNE   $CF81
CF8A   4CDACE   JMP   $CEDA
```

$CECF-$CFBC Trace routines.

```
CF90   54 52 91 00 00 54
CF96   52 4F 46 46 00 56
CF9C   41 52 00 1C 12 1D
CFA2   1D 1D 1D 1D 1D 1D
CFA8   1D 1D 1D 1D 1D 1D
CFAE   1D 20 56 41 52 49
CFB4   41 42 4C 45 53 20
CFBA   92 11 0D 97 00 11
CFC0   0D 1C 12 1D 1D 1D
CFC6   1D 1D 1D 1D 1D 1D
CFCC   1D 1D 20 41 52 52
CFD2   41 59 20 56 41 52
CFD8   49 41 42 4C 45 53
CFDE   20 92 11 0D 97 00
CFE4   A0 A0 A0 A0 A0 A0
CFEA   A0 A0 A0 A0 A0 A0
CFF0   A0 A0 A0 A0 A0 A0
CFF6   A0 A0 00 00 00 64
CFFC   00 0A 00 00
```

$CF90-$CFFC Data and storage area.

LOOK — NO TYPING
This program is on this month's Digi 'T' ape cassette. See their ad this issue!

CLASSIFIED INFO

Welcome to the classified ads page that's FREE to readers of *Your 64*. Advertise anything you want — as long as it's legal and within reason. If your ad doesn't fit into any of the categories on the coupon then make up your own. We ask only one thing — software has to be for swops only and it has to be original. Sorry . . . but we'd rather feed the programmers than the pirates.

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SOFTWARE

● I will swop *Poster Paster* for *Ghostbusters* or *Tapper*. Must be on cassette. Send to Danny Dinneen, 12 Bishopscourt Way, Wilton, Cork, Ireland.

● Original CBM 64 software and utilities to exchange on disk only. Lots of new stuff — 500 plus. Send list to Stephen Gregory, 12 Woodview, Shevington, Near Wigan, Lancashire WN8 6BG. Tel. (02575) 5326.

● Swop 150 top CBM 64 originals games including *Entombed, Blue Max, Shadowfire, Pitstop II, Tir na Nog, Quasimodo, Impossible Mission, Airwolf* and lots more for a 1541 disk drive, blank disks and Compunet modem. Please contact Irfan Latif Tel. (01) 223 3321

● Swop *Who Dares Wins* and *Hovver Bovver* for *International Soccer* in good condition. Contact Craig Dixely, Tel. (0245) 264 344 after 4pm only please.

● CBM 64 software to swop — 400 games for 1541 disk drive. *Track* and *Field, Pitstop II, Airwolf, Tir na Nog*, write for list to P Moon, 121 London Road, Gloucester GL2 0RR.

● I have 14 games to give away. Titles include *The Hobbit, BMX Racers, Busicalc, Cavelon, Connect 4* and more. No catch involved. Just write and the lucky one to be first through the letter box shall receive the goodies. Mr J Boyle, 15 Lochcraig Court, Bourtreehill, Irvine, Ayrshire KA11 1JY.

● 64 owner wishes to swop original software wth anyone in the world. Please send list to David Fitzsimons, 17 Westminster Place, Stenhousemuir, Stirlingshire FK5 4LN.

● CBM 64 original games to swop, many latest titles including *Frogger II, Buck Rogers, Lode Runner, Hunchback at the Olympics* and many more. Around 450 games mainly on tape, some on disk. Contact Simon Spalding, 41 Chain Lane, Mickleove, Derby DE3 5AL. Tel. (0332) 511984.

● I have many original games and utilities to swop. Over 1000 titles, mostly on disk, a few on tape. Write to Wim Vermeulen, Overysellaan, gg 2101 TC, Teemstede, Holland.

● I will swop *Ghostbusters, Aztec Challenge* and *Tales of the Arabian Nights* for a Currah Speech Synthesiser. Tel. (01) 890 2079 between 6pm and 9pm, ask for Mr Best. Will also include *Flight Path 737*.

● Anyone interested in some new original software for the CBM 64? I'm interested in doing some swopping. Send sae to Mr R Joannides, 27 Tanners HIl, Watford, Herts WD5 0NU.

● *Chinese Juggler* by Ocean to swop. Many other original titles too. Tel. (0504) 810768 and ask for David. Better still, why not write to 7 Alandale Park, Eglinton, Co. Derry, N. Ireland BT47 3QF.

● CBM 64 original games and utilities to swop. Send list to Jorge Leitte, Ostergardsgatan 10, S-212 22, Malmo, Sweden.

● CMB 64 original software to swop. I have about 200 programs. Send for list to Niels-Erik Sunesen, Rottumerplaat 210, Delfzijl 9931 EM, Holland.

HARDWARE

● Swop your Commodore 64/datasette for my 48K Spectrum+, interface and Quickshot II joystick with a selection of good software. Tel. (0379) 2532 between 4pm and 6.30pm and ask for Andrew.

● For sale. MPS01 printer, brand new, never used — an unwanted gift. Bargain at £175, postage and packaging included. Tel. (0427) 873832 and ask for Mr P Husler.

● Exchange Shugart 8 inch double density floppy drive (480 KBytes), plus a box of blank disks for the CBM 1541 disk drive. Contact Malcolm Rawlins Tel. (0438) 312422 ext 3488 daytime only or (0438) 68148 evenings.

● CBM 64, C2N, joystick, games and books all boxed as new. Only £160 ono. Tel. (01) 209 1453 and ask for Andrew Powrie.

● 4040 disk drive (upgraded 3040) with Dams interface and cable for CBM 64. User manuals, Dams DOS support on disk — £450 or swop for a 1541 disk drive plus £300. Tel. (0753) 883800 and ask for John.

● For sale. Commodore modem as new. Including nine months subscription to Compunet — £65 ono. Tel. (0667) 54449 after 6pm and ask for Kenny.

● Spectrum 48K computer for sale along with data recorder, sound booster, joystick interface, joystick, books, magazines and games. Also Learn Basic package, good for beginners. All for £180. Write to Simon Ball, 15 Cherry Tree Road, Wales, Near Sheffield S31 8LL or Tel. (0909) 772959.

● CBM 64, C2N, 1541 disk drive, 1520 printer/plotter, assorted software and joysticks. Also *Simons' Basic* included. £370 ono. Tel. (061) 748 2175 and ask for David Wright.

● For sale. CBM 64, C2N datasette, 1520 printer/plotter, joystick, lightpen, word processor, database, games and books. All in excellent condition. Only £270. Tel (0732) 844846 evenings only and ask for R Lowes.

● Vic-20, motherboard and games for £80. Atari VCS £50 or swop for CBM 1701 monitor or 1541 disk drive. Write to Tony C., 3 Wellington Street, Ripon, North Yorkshire, HG4 1PH.

● C64 plus C2N. Nine month guarantee. Reference guide, program techniques, joystick, dustcovers, nine original games and lots of utilities. Excellent condition — £190 ono. Tel. (0742) 311168 and ask for Neil.

● CBM 64, MPS801 printer, C2N recorder plus over £100 worth of software, books and magazines. Worth £700, going for £350 ono Tel. (01) 902 6392 and speak to Tony Walker.

● Memotech 512, 64K, centronics interface, edge connector (ROM etc), two Level 9 adventures, chess and a C2N recorder. £250 ono. Tel. (01) 961 1399 and ask for Peter Walker. Please ring in the evening or at weekends.

● Commodore 64, cassette unit, printer/plotter, joystick and £200 worth of software. Total value £500, bargain at £280. Tel. (07372) 43905 after 5pm and ask for Tim.

MESSAGES

● Help! Could anyone tell me how to get into the castle in *The Castle of Terror*. This is my last desperate attempt. Tel. (0303) 78898 and ask for Stuart Collins.

● Please could someone tell me how to do the sixth screen and upwards in *Storm Warrior* in detail. Contact Marc Souter, The Paddock, Chapelgate, Sutton-St-James, Lincs PE12 0EF.

WANTED

●1520 printer/plotter. I'll either pay cash or will swop with *International Soccer, Beach Head, Bozo's Night Out, Fastback, Icarus, Basicode, House of Usher*, various listings, Honey aid utility and 64-tapes 5, 6 and 8. All original. Tel. (0502) 715989 and ask for TC Filby.

● 1541 disk drive also *Easy Script, Easy File* and *Future Finance*. Tel. (0704) 211744 weekend evenings only and ask for B Marshall.

● Penpal aged between 18-30 for female CBM 64 user. Especially an adventure freak. Write to Amanda Westwood, 9 Eltham Crescent, Stainsby Beck, Thornaby, Cleveland TS17 9RA. All letters will be answered (eventually!!).

● Wanted for Club Music demonstration. Any music files to run off 3001, Master Composer, The Music Shop or Kawasaki synthesiser. Please help to form Club Music library. All letters answered. Write to Airwaves Computer Club, PO Box 48, Derby DE6 6QP.

● CBM 64 users wanted to swop software. 1000 titles including recent US and British releases. All letters answered by return of post. Please send list to Ivan Parker, 28 Chevin Gardens, Top Valley, Nottingham or Tel. (0602) 756608.

● I want two US Gold games, *Spy Hunter, F15* or *Fort Apocalypse*. I will swop *Interdictor Pilot, Acos+, Tornado Low Level, Times Computer Puzzles, Unorthodox Engineers* and PCN selection. If you can get me what I want, Tel. (0422) 249913 and ask for Mr J Rastrick.

● Wanted CBM 64, 1541 disk drive and MPS-801 printer. Tel. (01) 641 0169 (home), (08833) 7955 (office) and ask for John Drew.

CLUBS AND EVENTS

● Orcsbane. A new fanzine dedicated to adventure gamers. Only fifty pence for first issue. Artwork, articles and help also needed. Interested? Contact Nick Walkland, Tartarus, 84 Kendal Road, Hillsborough, Sheffield S6 4QH, Yorkshire.

● Commodore Users Group Venlo. We want some names, addresses and telephone numbers for databases. Please reply to the group, Van Ponstraat 14, 5913 VK Venlo, The Netherlands.

● Commodore Users Group Peterborough. All those interested in CBM computing are welcome to join. Meetings held alternate Wednesdays from May 1st at Dretton Woods School. For further details Tel. (0733) 210948 and ask for the club secretary Paul. 64

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Address ....

....

.... Postcode ....

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(Please tick) ☐ HARDWARE ☐ SOFTWARE
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